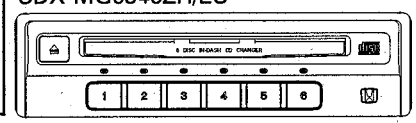
Service Manual

Pioneer

HONDA

CDX-MG6346ZH/ES



ORDER NO.
CRT2407

6 DISC IN-DASH CD CHANGER

CDX-MG6346ZH ES
CDX-MG6446ZH ES

COMPACT disc DIGITAL AUDIO

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-890	CRT2376	G1	CD Mechanism Module:Circuit Description, Mechanism Operation, Disassembly

VEHICLE	DESTINATION	PRODUCED AFTER	HONDA PART No.	ID No.	PIONEER MODEL No.
Not specified	THAILAND, AUSTRALIA	October 1999	08A06-3B5-300	——	CDX-MG6346ZH/ES
Not specified	THAILAND, AUSTRALIA	October 1999	08A06-3B5-310	——	CDX-MG6446ZH/ES

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PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

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K-ZZB. OCT. 1999 Printed in Japan

● CD Player Service Precautions

1. For pickup unit(CXX1311) handling, please refer to"Disassembly"(see page 52).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).

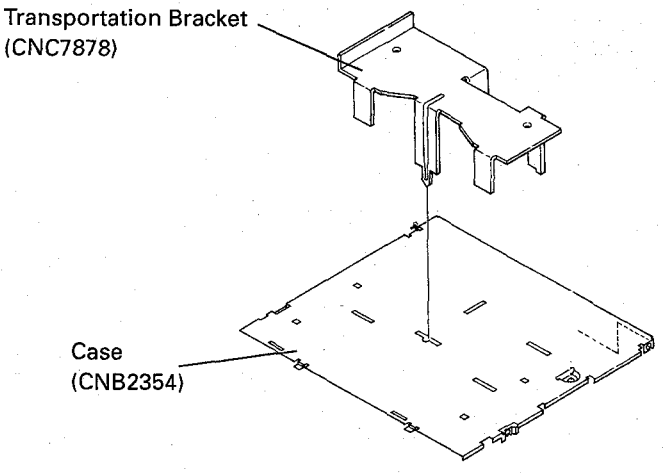
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

3. Please checking the grating after changing the service pickup unit(see page 46).

● When the Repair is Complete

When the repair is complete, make the CD mechanism ready for transportation implementing the following procedures:

1. Press the changer side 1 and 4 simultaneously to turn the ACC on.
2. As the ACC is turned on, the disc indicator blinks in red.
3. When the blinking is stopped, the mechanism is ready for the transportation.
4. Attach the Transportation Bracket (CNC7878). Now you can transport it.(See the figure below)



1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

Service Manual

Pioneer

HONDA

ORDER NO.
CRT2580

6 DISC IN-DASH CD CHANGER

CDX-MG6156ZH EW

COMPACT disc DIGITAL AUDIO

VEHICLE	DESTINATION	PRODUCED AFTER	PART No.	ID No.	PIONEER MODEL No.
CIVIC,CR-V,ACCORD	EUROPE	November 2000	08A06-3C6-500	831NT	CDX-MG6156ZH/EW

● This service manual should be used together with the following manual(s):

Model	Order No.	Mech. Module	Remarks
CDX-MG6346ZH/ES	CRT2407		
CX-890	CRT2376	G1	CD Mech. Module:Circuit Description,Mech. Operation,Disassembly

EXPLODED VIEWS AND PARTS LIST

PACKING (Page 3)

● **PACKING SECTION PARTS LIST**

Mark	No.	Description	Part No.	
			CDX-MG6346ZH/ES	CDX-MG6156ZH/EW
	5	Owner's Manual	CRB1561	CRD3333
	11	Carton	CHG3909	CHG4300
	12	Contain Box	CHL3909	CHL4300

EXTERIOR (Page 4)

● **EXTERIOR SECTION PARTS LIST**

Mark	No.	Description	Part No.	
			CDX-MG6346ZH/ES	CDX-MG6156ZH/EW
	27	Door	CAT2003	CAT2242
	41	Grille Unit	CXB3409	CXB7115

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
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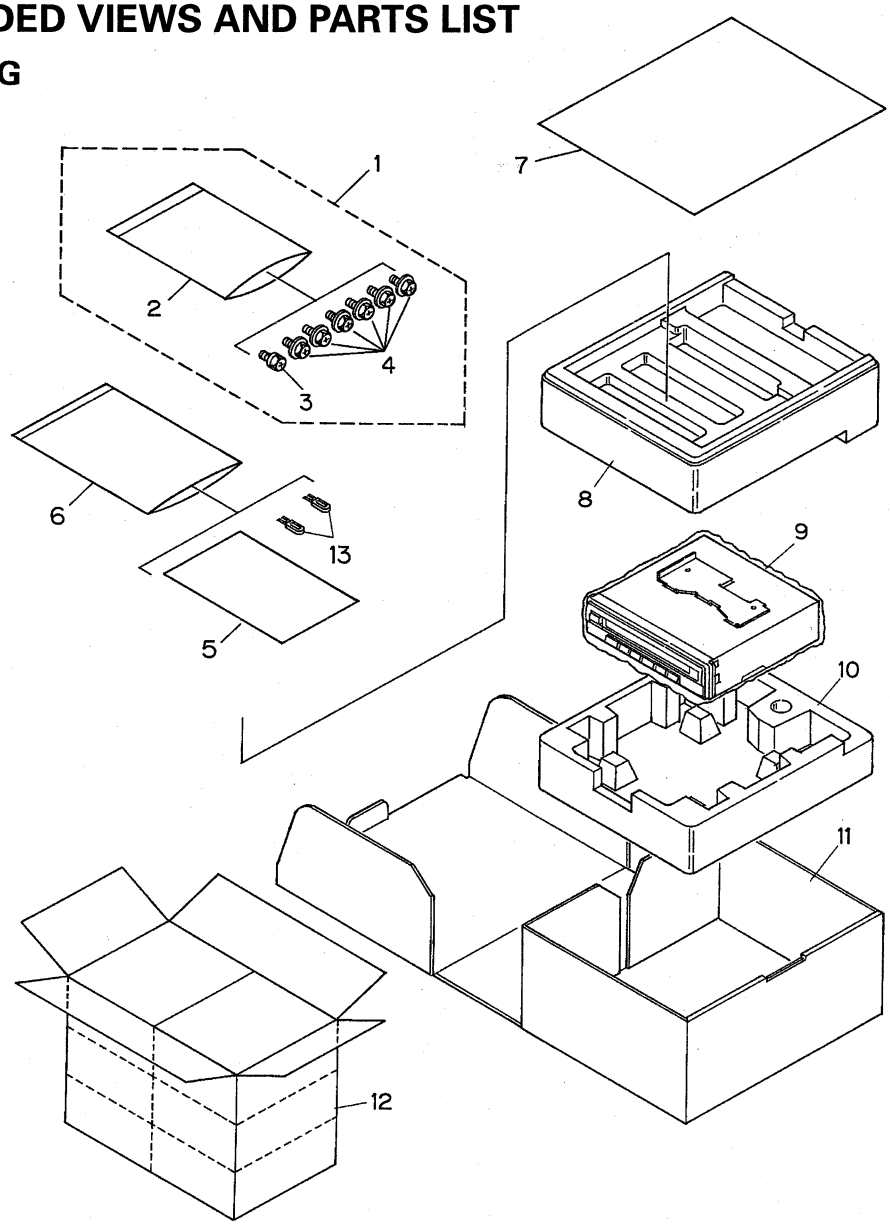
2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



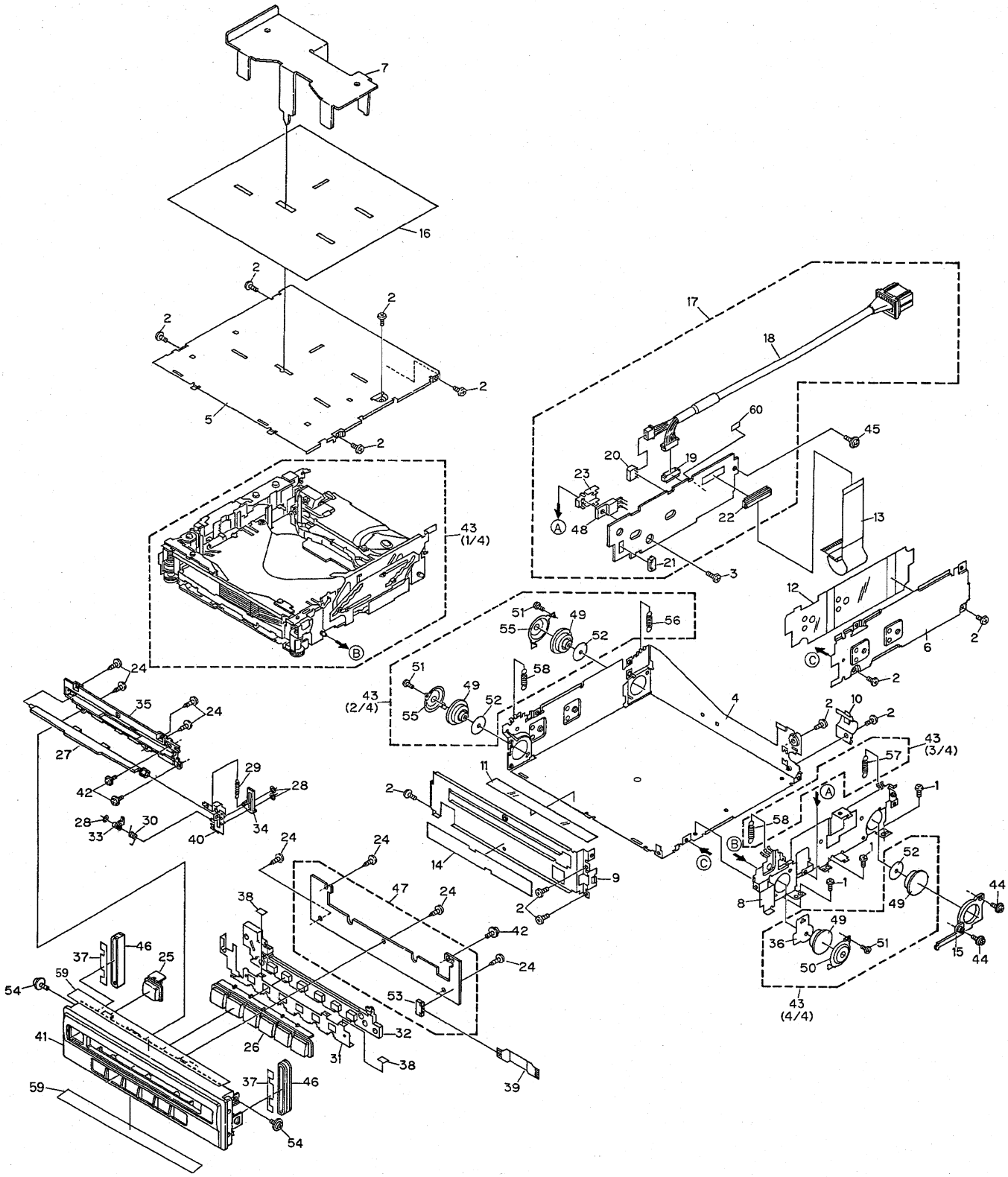
NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw Assy	CEA2537
*	2	Polyethylene Bag	CEG-127
	3	Screw	HMF40P060FZK
	4	Screw	HMF50P080FMC
	5	Owner's Manual(English)	CRB1561
	6	Polyethylene Bag	CEG1116
*	7	Sheet	CHW1402
	8	Protector	CHP2123
*	9	Polyethylene Bag	E36-609
	10	Protector	CHP2124
	11	Carton(CDX-MG6346ZH/ES)	CHG3909
		Carton(CDX-MG6446ZH/ES)	CHG3991
	12	Contain Box(CDX-MG6346ZH/ES)	CHL3909
		Contain Box(CDX-MG6446ZH/ES)	CHL3991
*	13	Band	CNF-512

2.2 EXTERIOR


7
16
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13
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(1/4)
12
6
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52
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58
43
(2/4)
4
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43
(3/4)
57
24
35
27
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42
28
33
30
40
34
11
14
9
1
8
52
49
44
15
36
50
51
43
(4/4)
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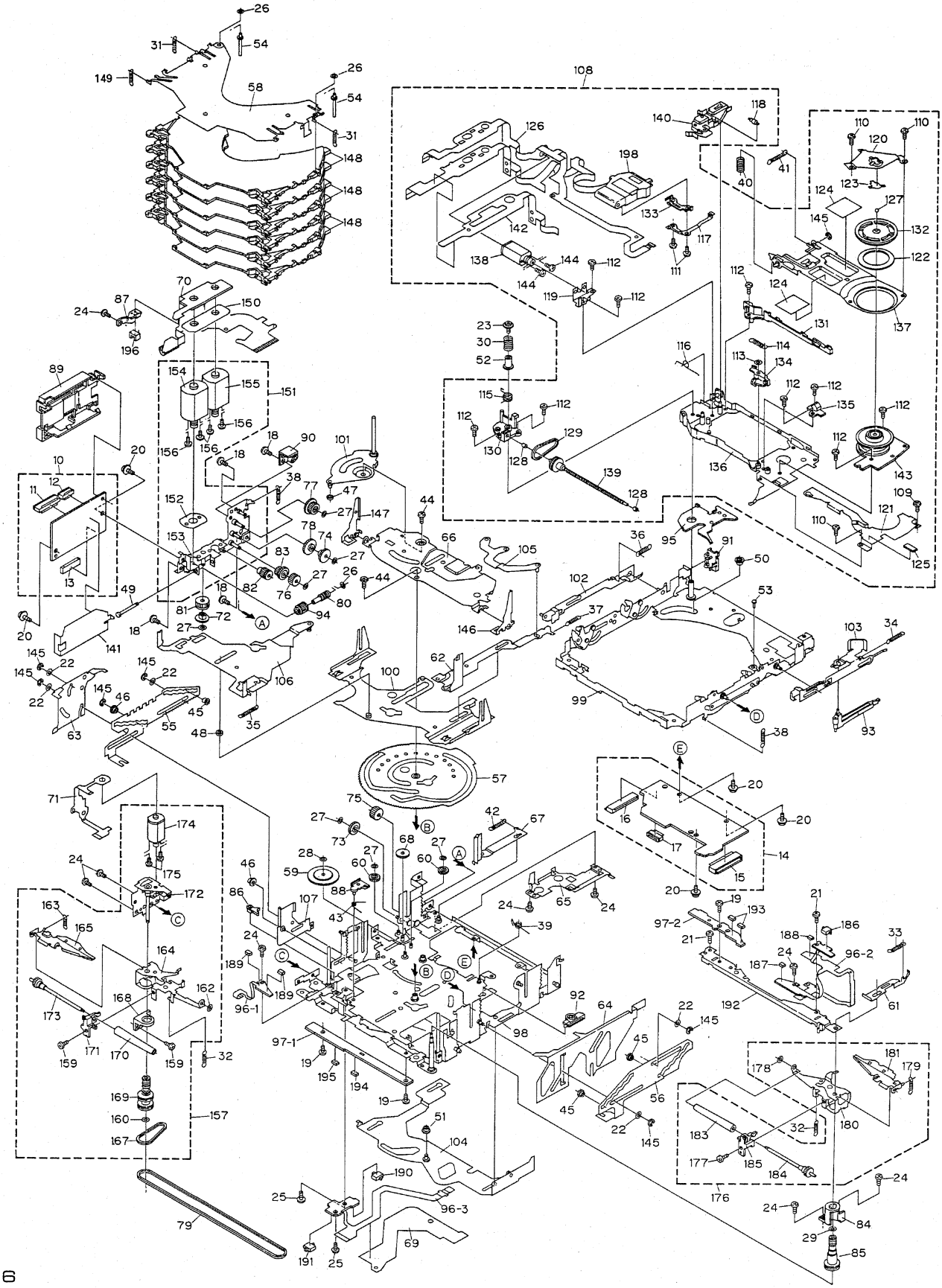
32
53
39

● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ20P020FMC
	2	Screw	BMZ26P030FMC
	3	Screw	BMZ26P060FMC
	4	Chassis Unit(CDX-MG6346ZH/ES)	CXB3407
		Chassis Unit(CDX-MG6446ZH/ES)	CXB5581
	5	Case	CNB2354
	6	Side Frame	CNB2397
	7	Bracket	CNC7878
	8	Bracket(CDX-MG6346ZH/ES)	CNC8026
		Bracket(CDX-MG6446ZH/ES)	CNC8816
	9	Front Frame	CNC8110
	10	Holder	CNC8111
	11	Insulator	CNM5969
	12	Insulator	CNM6112
	13	PCB	CNP5516
	14	Insulator	CNM6409
	15	Holder	CNV5543
*	16	Caution Label	CRP1200
	17	Extension Unit	CWM6677
	18	Cord	CDE6148
	19	Connector(CN102)	CKS2200
	20	Connector(CN103)	CKS3597
	21	Connector(CN701)	CKS3785
	22	Connector(CN101)	CKS3989
	23	Holder	CNC8031
	24	Screw	BPZ20P060FMC
	25	Button	CAC5864
	26	Button	CAC5865
	27	Door	CAT2003
	28	Washer	CBF1038

Mark	No.	Description	Part No.
	29	Spring	CBH2201
	30	Spring	CBH2200
	31	Conductor	CNC8051
	32	Lighting Conductor	CNV5901
	33	Gear	CNV5547
	34	Arm	CNV5548
	35	Guide	CNV5880
	36	Sheet	CNM6318
	37	Double Faced Tape	CNM6424
	38	Insulator	CNM6512
	39	PCB	CNP5373
	40	Bracket Unit	CXB3111
	41	Grille Unit	CXB3409
	42	Screw	IMS20P040FMC
	43	CD Mechanism Module(G1)	CXK4702
	44	Screw	IMS20P040FMC
	45	Screw	IMS26P040FMC
	46	Cushion	CNV5674
	47	Keyboard Unit	CWM6289
	48	Transistor(Q708)	2SB1335A
	49	Damper	CNV5120
	50	Holder	CNC7826
	51	Screw	CBA1250
	52	Sheet	CNM5981
	53	Connector(CN901)	CKS3785
	54	Screw	IMS26P030FZK
	55	Holder	CNC7477
	56	Spring(Left Rear)	CBH2365
	57	Spring(Right Rear)(Black)	CBH2361
	58	Spring(Front)	CBH2360
	59	Spacer	CNM6658
	60	Spacer	CNM6626

2.3 CD MECHANISM



● CD MECHANISM SECTION PARTS LIST

Mark	No.	Description	Part No.
	1-9	●●●●●	
	10	CD Core Unit(Servo Unit)	CWX2202
	11	Connector(CN101)	CKS2764
	12	Connector(CN301)	CKS3966
	13	Connector(CN201)	CKS3991
	14	CD Core Unit(STS Unit)	CWX2203
	15	Connector(CN701)	CKS3989
	16	Connector(CN801)	CKS3989
	17	Connector(CN802)	CKS4054
	18	Screw	CBA1037
	19	Screw	CBA1041
	20	Screw	CBA1076
	21	Screw	CBA1250
	22	Screw	CBA1405
	23	Screw	CBA1452
	24	Screw	CBA1453
	25	Screw	CBA1479
	26	Washer	CBF1037
	27	Washer	CBF1038
	28	Washer	CBF1039
	29	Washer	CBF1064
	30	Spring	CBH2007
	31	Spring	CBH2271
	32	Spring	CBH2274
	33	Spring	CBH2014
	34	Spring	CBH2015
	35	Spring	CBH2016
	36	Spring	CBH2017
	37	Spring	CBH2290
	38	Spring	CBH2019
	39	Spring	CBH2064
	40	Spring	CBH2195
	41	Spring	CBH2196
	42	Spring	CBH2224
	43	Spring	CBH2250
	44	Screw	CBA1082
	45	Roller	CLA3154
	46	Roller	CLA3157
	47	Roller	CLA3159
	48	Roller	CLA3160
	49	Shaft	CLA3179
	50	Spacer	CLA3194
	51	Roller	CLA3248
	52	Bush	CLA3353
*	53	Shaft	CLA3469
	54	Shaft	CLA3693
	55	Steer	CNC7215
	56	Steer	CNC7216
	57	Cam	CNC7227
*	58	Holder	CNC7235
	59	Gear	CNC7236
	60	Gear	CNC7238
	61	Lever	CNC7243
	62	Lever	CNC7244
	63	Lever	CNC7245
	64	Lever	CNC7246
	65	Cover	CNC7441
	66	Holder	CNC8613
	67	Lever	CNC8024
	68	Gear	CNC8140
	69	Sheet	CNM5831
	70	PCB	CNP5680
	71	PCB	CNP5681
	72	Gear	CNR1479
	73	Gear	CNR1481
	74	Gear	CNR1495
	75	Gear	CNR1501
	76	Gear	CNR1502
	77	Gear	CNR1540
	78	Gear	CNR1541
	79	Belt	CNT1080
	80	Worm Gear	CNV5046
	81	Gear	CNV5047
	82	Gear	CNV5048
	83	Gear	CNV5049
	84	Holder	CNV5056
	85	Pulley	CNV5058
	86	Arm	CNV5061
	87	Spacer	CNV5066
	88	Arm	CNV5189
	89	Cover	CNV5207
	90	Cover	CNV5424
	91	Cover	CNV5425
	92	Lever	CNV5427
	93	Arm	CNV5491
	94	Gear	CNV5519
	95	Holder	CNV5648
	96	Composite PCB	CNX3141
	97	Composite PCB	CNX2989
	98	Chassis Unit	CXB4314

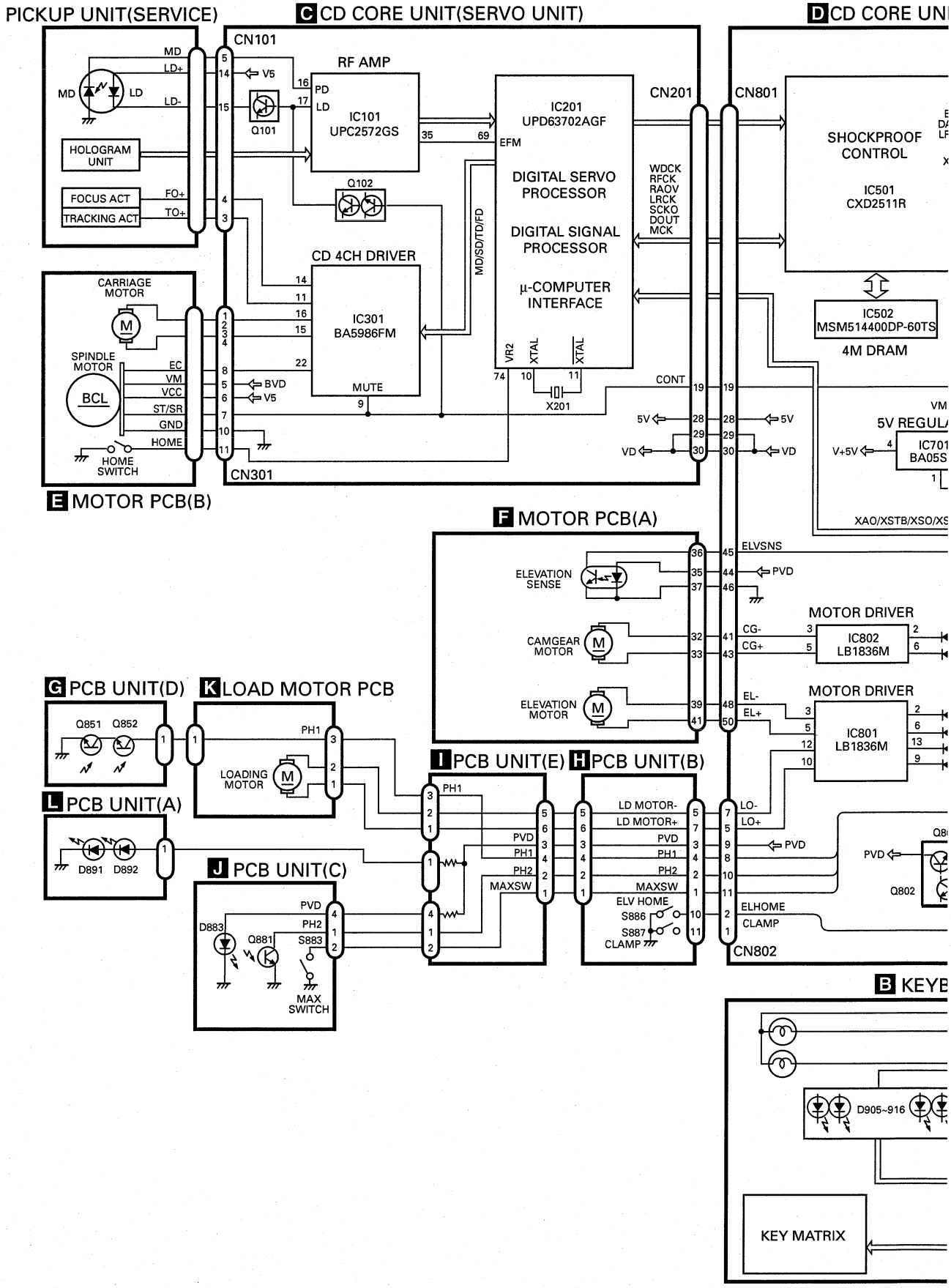
Mark	No.	Description	Part No.
	99	Frame Unit	CXB2702
	100	Lever Unit	CXB2703
	101	Arm Unit	CXB2704
	102	Lever Unit	CXB2708
	103	Lever Unit	CXB2709
	104	Lever Unit	CXB2711
	105	Arm Unit	CXB2712
	106	Lever Unit	CXB2713
	107	Lever Unit	CXB2714
	108	Carriage Mechanism Unit(G1)	CXB5639
	109	Screw	CBA1041
	110	Screw	CBA1250
	111	Screw	CBA1362
	112	Screw	CBA1471
	113	Washer	CBF1038
	114	Spring	CBH2008
	115	Spring	CBH2009
	116	Spring	CBH2010
	117	Spring	CBL1335
	118	Roller	CLA3707
*	119	Bracket	CNC7228
	120	Guide Unit	CXB4417
	121	Cover	CNC7628
	122	Sheet	CNM6414
	123	Sheet	CNM5378
	124	Sheet	CNM5695
	125	Sheet	CNM5827
	126	PCB	CNP4978
	127	Ball	CNR1189
	128	Bearing	CNR1423
	129	Belt	CNT1079
	130	Holder	CNV5037
	131	Guide	CNV5040
	132	Clamper	CNV5042
	133	Rack	CNV5111
	134	Arm	CNV5579
	135	Holder	CNV5759
*	136	Chassis	CXB2698
	137	Arm Unit	CXB2705
	138	Motor Unit(M4 CARRIAGE)	CXB3178
	139	Screw Unit	CXB3179
	140	Lever Unit	CXB4450
	141	Insulator	CNM6306
	142	Spacer	CNM6345
	143	Motor(M5 SPINDLE)	CXM1120

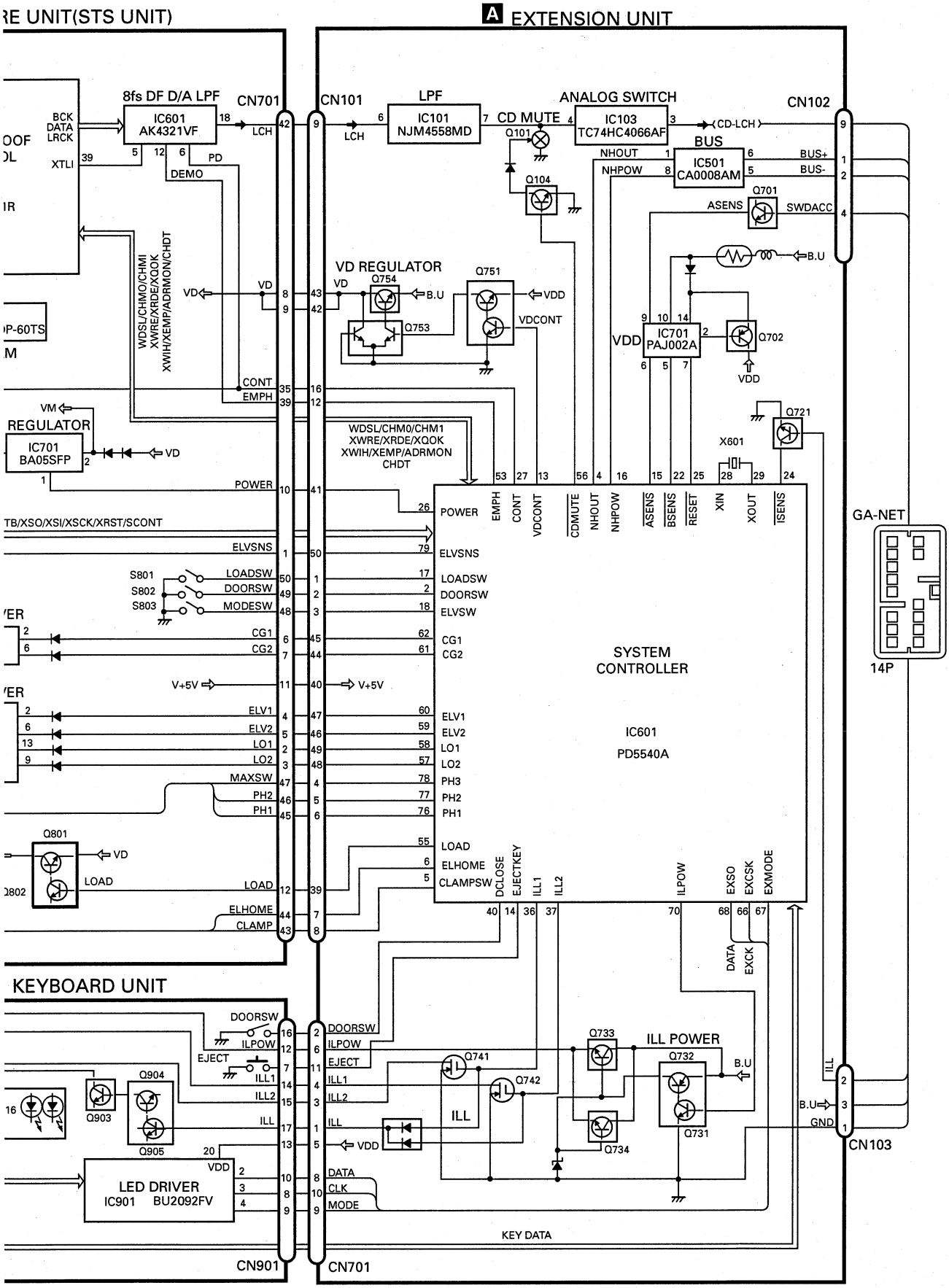
Mark	No.	Description	Part No.
	144	Screw	JFZ14P020FZK
	145	Washer	YE15FUC
	146	Arm Unit	CXB4953
	147	Arm Unit	CXB4954
	148	Tray Assy	CXB4307
	149	Spring	CBH2269
	150	Sheet	CNM6699
	151	Cam Motor Assy	CXB3170
	152	Spacer	CNC8289
*	153	Bracket Unit	CXB4165
*	154	Motor Unit(M1 Cam Gear)	CXB3174
*	155	Motor Unit(M3 ELV)	CXB3175
	156	Screw	JFZ20P025FMC
	157	Loading Arm L Assy	CXB3171
	158	•••••	
	159	Screw	CBA1453
	160	Washer	CBF1038
	161	•••••	
	162	Washer	CBF1074
	163	Spring	CBH2136
*	164	Arm	CNC7241
*	165	Arm	CXB4449
	166	•••••	
	167	Belt	CNT1079
	168	Holder	CNV5055
	169	Pulley	CNV5057
	170	Roller	CNV5064
	171	Guide	CNV5125
*	172	Bracket Unit	CXB4316
	173	Roller Gear Unit	CXB3176
*	174	Motor Unit(M2 LOAD)	CXB3177
	175	Screw	JFZ14P020FMC
	176	Loading Arm R Assy	CXB3172
	177	Screw	CBA1453
	178	Washer	CBF1074
	179	Spring	CBH2136
*	180	Arm	CNC7242
*	181	Arm	CXB4448
	182	•••••	
	183	Roller	CNV5064
	184	Roller Gear Unit	CXB3176
	185	Guide	CNV5126
	186	Switch(S885 MAX)	CSN1052
	187	LED(D883)	CL202IRXTU
	188	Photo-transistor(Q881)	CPT230SCTD(CD)

Mark	No.	Description	Part No.
	189	LED(D891,892)	CL202IRXTU
	190	Switch(S887 CLAMP)	CSN1051
	191	Switch(S886 ELV HOME)	CSN1052
	192	Bracket Unit	CXB4306
	193	Photo-transistor(Q851,852)	CPT230SCTD(CD)
	194	Resistor(R856)	RS1/8S911J
	195	Resistor(R857)	RS1/8S821J
	196	Photo-interrupter(Q1)	RPI-221
	197	●●●●●	
	198	Pickup Unit(Service)(P8)	CXX1311

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

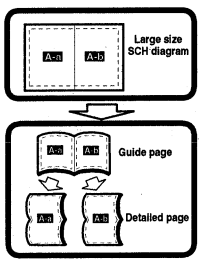
3.1 BLOCK DIAGRAM



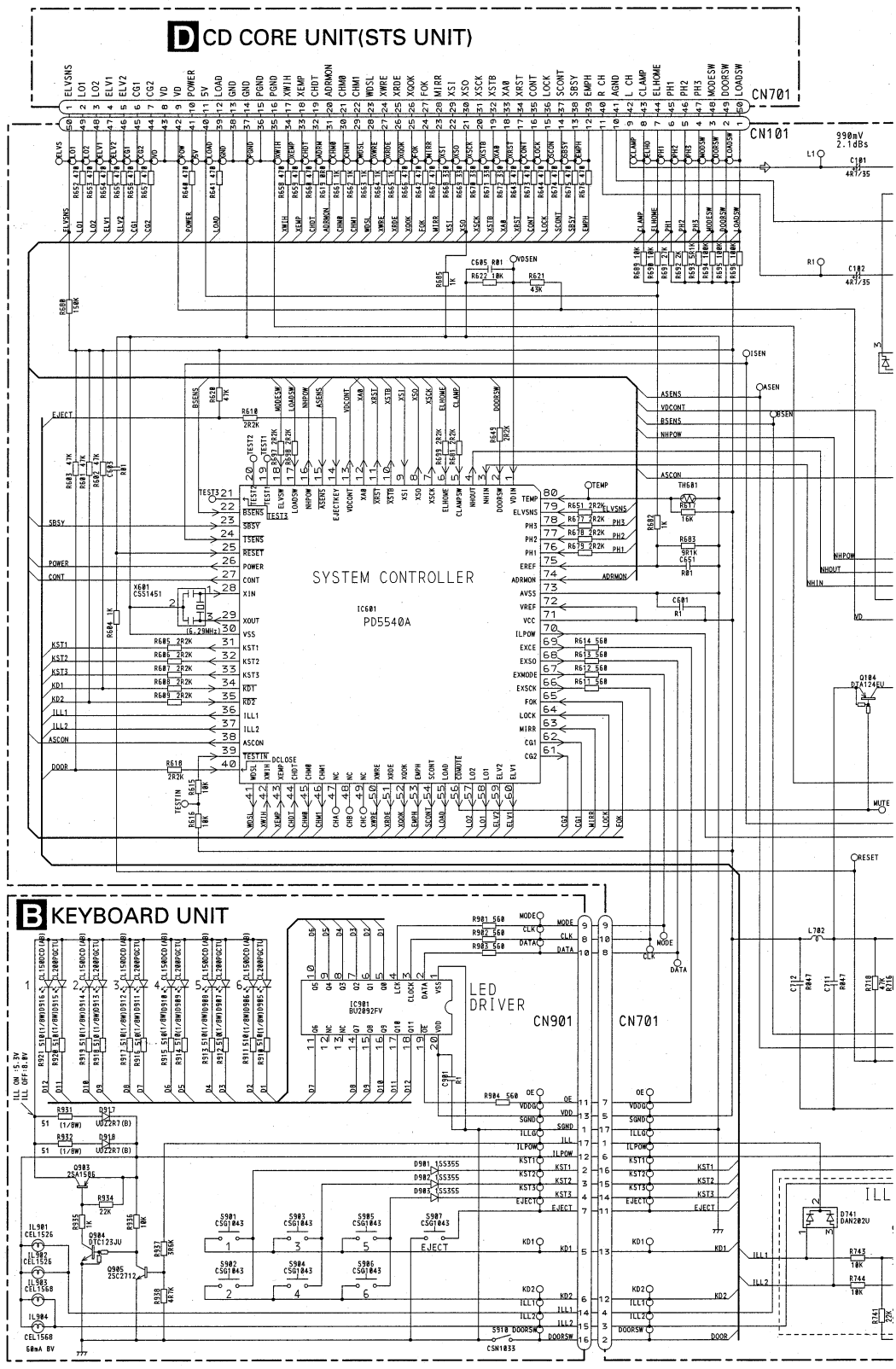

RE UNIT(STS UNIT)
A EXTENSION UNIT
8fs DF D/A LPF
IC601 AK4321VF
CN701
CN101
LPF
IC101 NJM4558MD
CD MUTE
Q101
ANALOG SWITCH
IC103 TC74HC4066AF
CN102
CD-LCH
BUS
IC501 CA0008AM
BUS+
BUS-
NHOUT
NHPOW
Q104
Q701
ASENS
SWDACC
B.U
VD REGULATOR
Q754
Q753
Q751
VDD
VDCONT
IC701 PAJ002A
Q702
VDD
Q721
X601
WDSL/CHM0/CHM1
XWRE/XRDE/XQOK
XWIH/XEMP/ADRMON
CHDT
REGULATOR
IC701 BA05SFP
VM
VD
POWER
TB/XSO/XSI/XSCK/XRST/SCONT
ELVSNS
S801
S802
S803
LOADSW
DOORSW
MODESW
CG1
CG2
V+5V
ELV1
ELV2
LO1
LO2
MAXSW
PH2
PH1
Q801
LOAD
ELHOME
CLAMP
SYSTEM CONTROLLER
IC601
PD5540A
EMPH
CONT
VDCONT
CDMUTE
NHOUT
NHPOW
ASENS
BSENS
RESET
XIN
XOUT
ISENS
DCLOSE
EJECTKEY
ILL1
ILL2
ILPOW
EXSO
EXCSK
EXMODE
DATA
EXCK
GA-NET
14P
KEYBOARD UNIT
DOORSW
ILPOW
EJECT
ILL1
ILL2
ILL
Q903
Q904
Q905
LED DRIVER
IC901 BU2092FV
DATA
CLK
MODE
Q741
Q742
Q733
Q734
Q732
Q731
ILL POWER
KEY DATA
CN901
CN103
GND

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

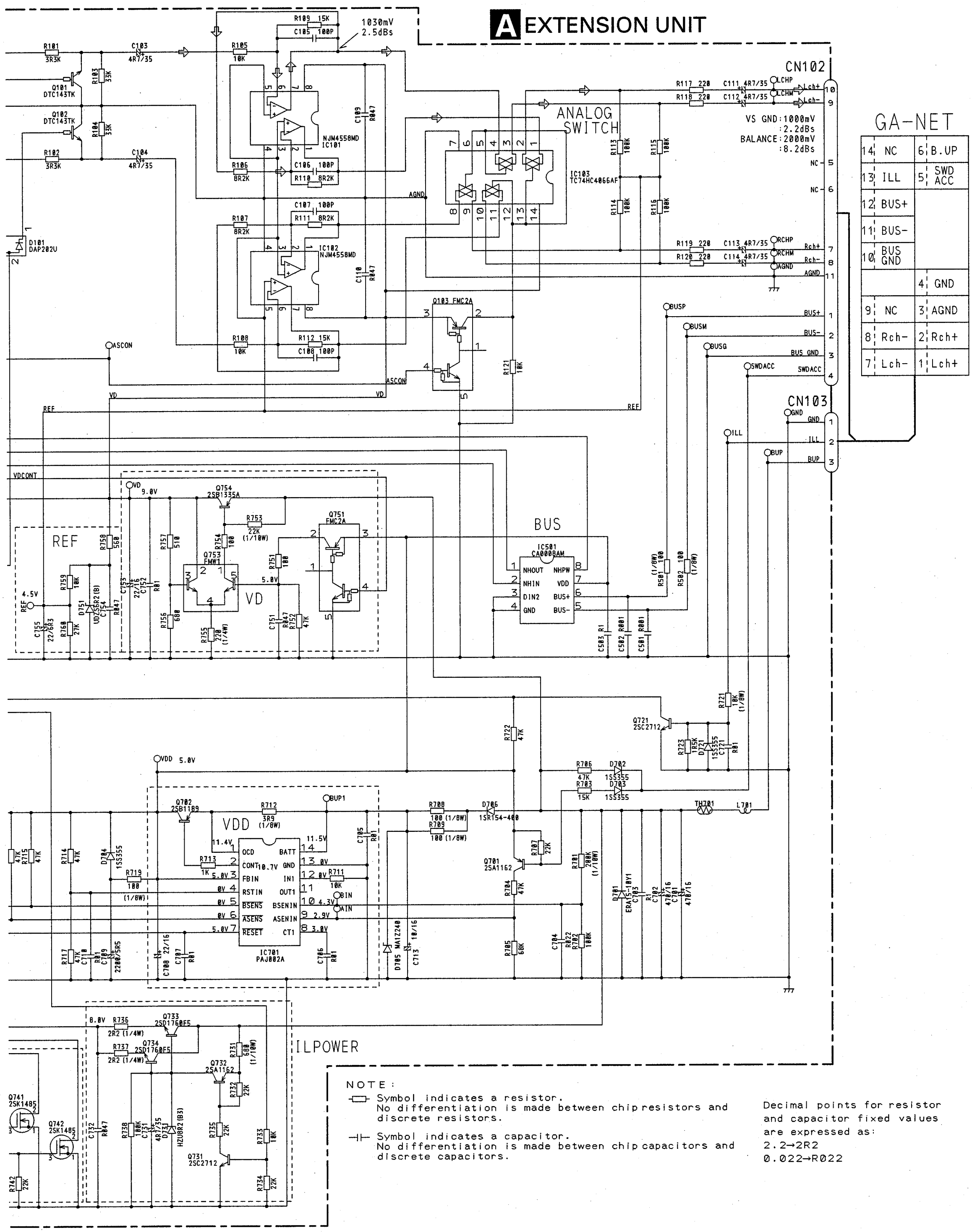


A-a



A-b

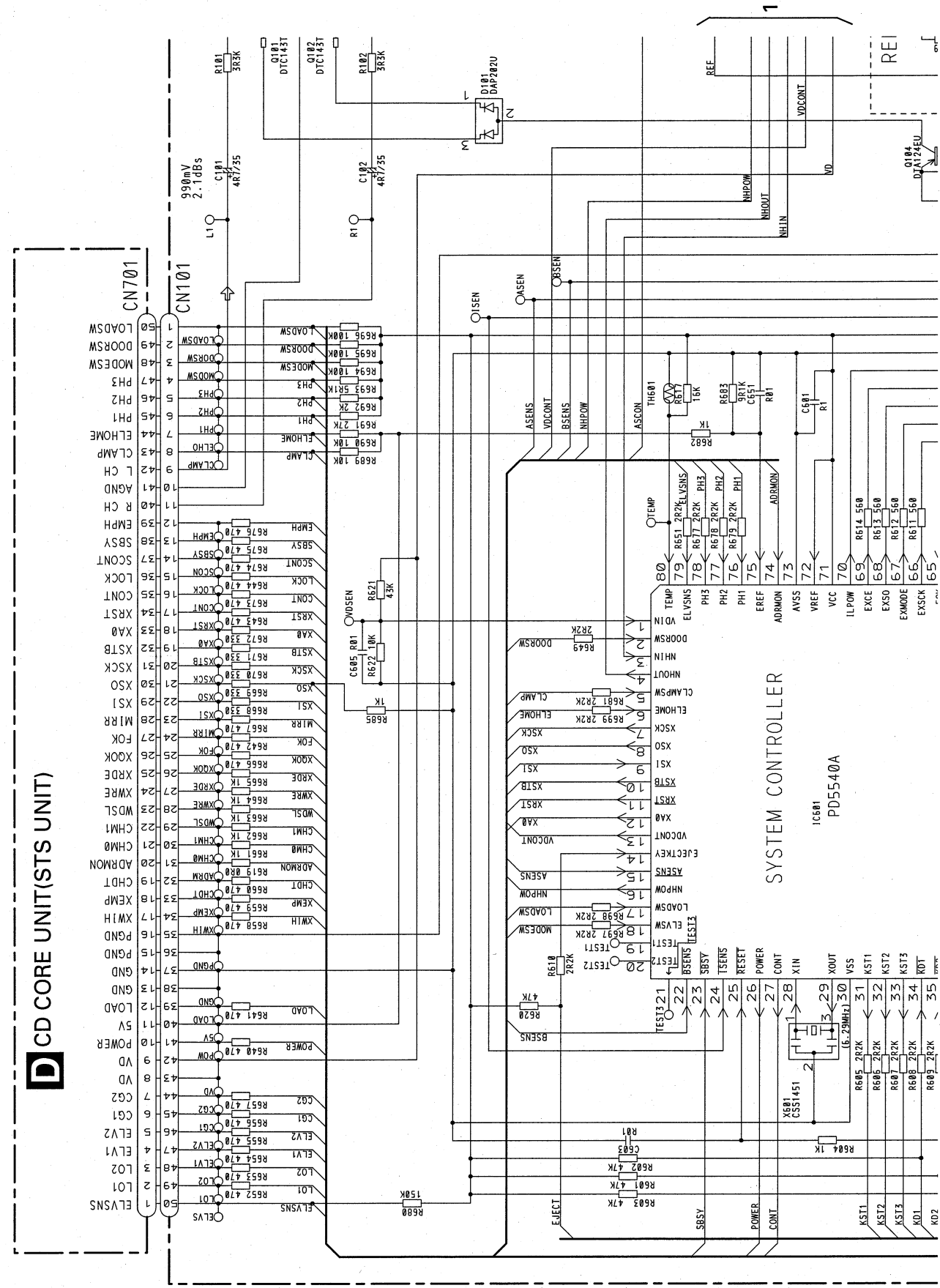
A-b

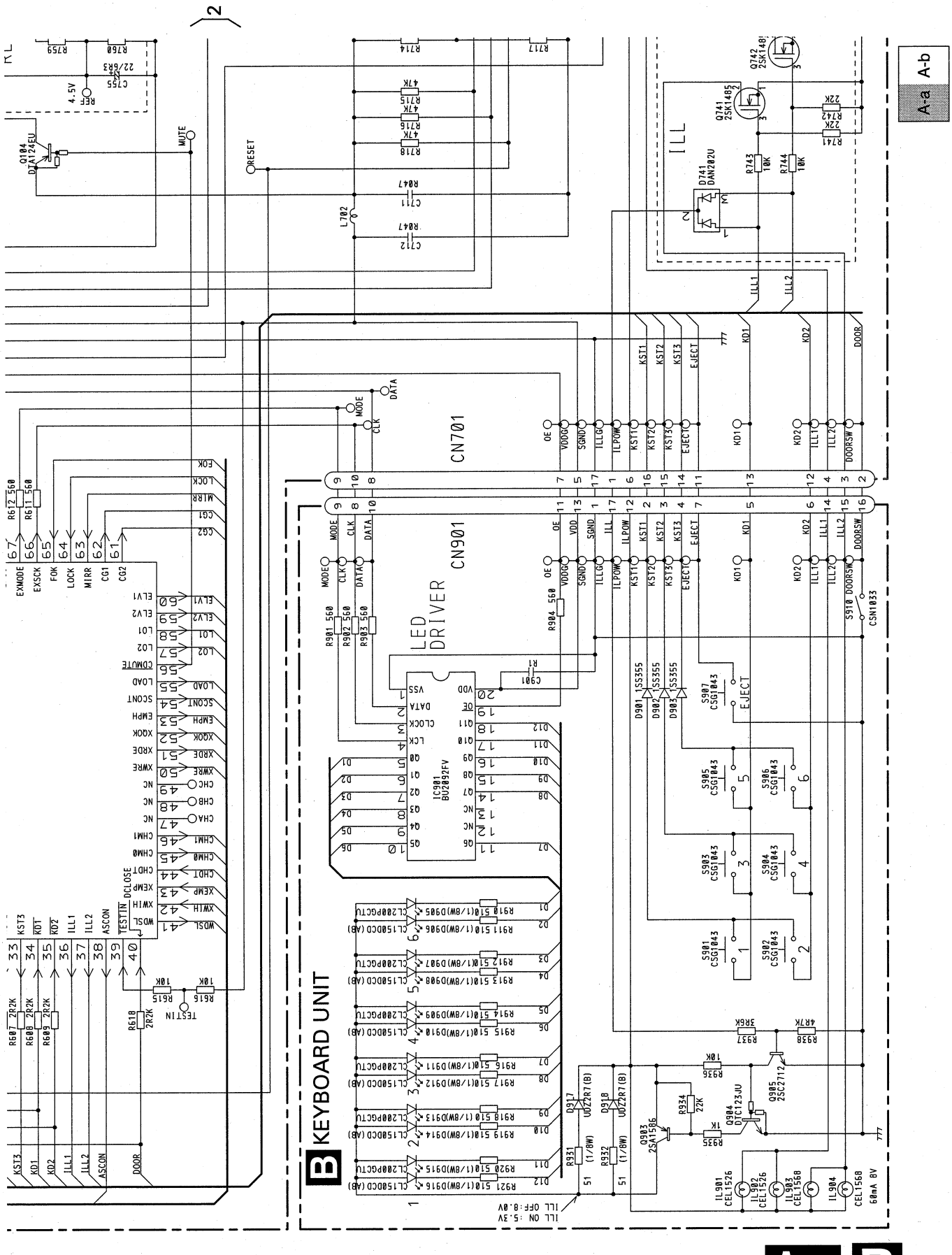

A EXTENSION UNIT
1030mV
2.5dBs
NJM4558MD IC101
IC102 NJM4558MD
ANALOG SWITCH
IC103 TC74HC4066AF
Q103 FMC2A
CN102
VS GND:1000mV :2.2dBs
BALANCE:2000mV :8.2dBs
GA-NET
14 NC
6 B.UP
13 ILL
5 SWD ACC
12 BUS+
11 BUS-
10 BUS GND
4 GND
9 NC
3 AGND
8 Rch-
2 Rch+
7 Lch-
1 Lch+
CN103
BUS
IC501 CA0008AM
REF
VD
Q751 FMC2A
Q753 FMW1
Q754 2SB1335A
VDD
IC701 PAJ002A
Q702 2SB1189
Q701 2SA1162
Q721 2SC2712
ILPOWER
Q733 2SD1760F5
Q734 2SD1760F5
Q732 2SA1162
Q731 2SC2712
Q741 2SK1485
Q742 2SK1485

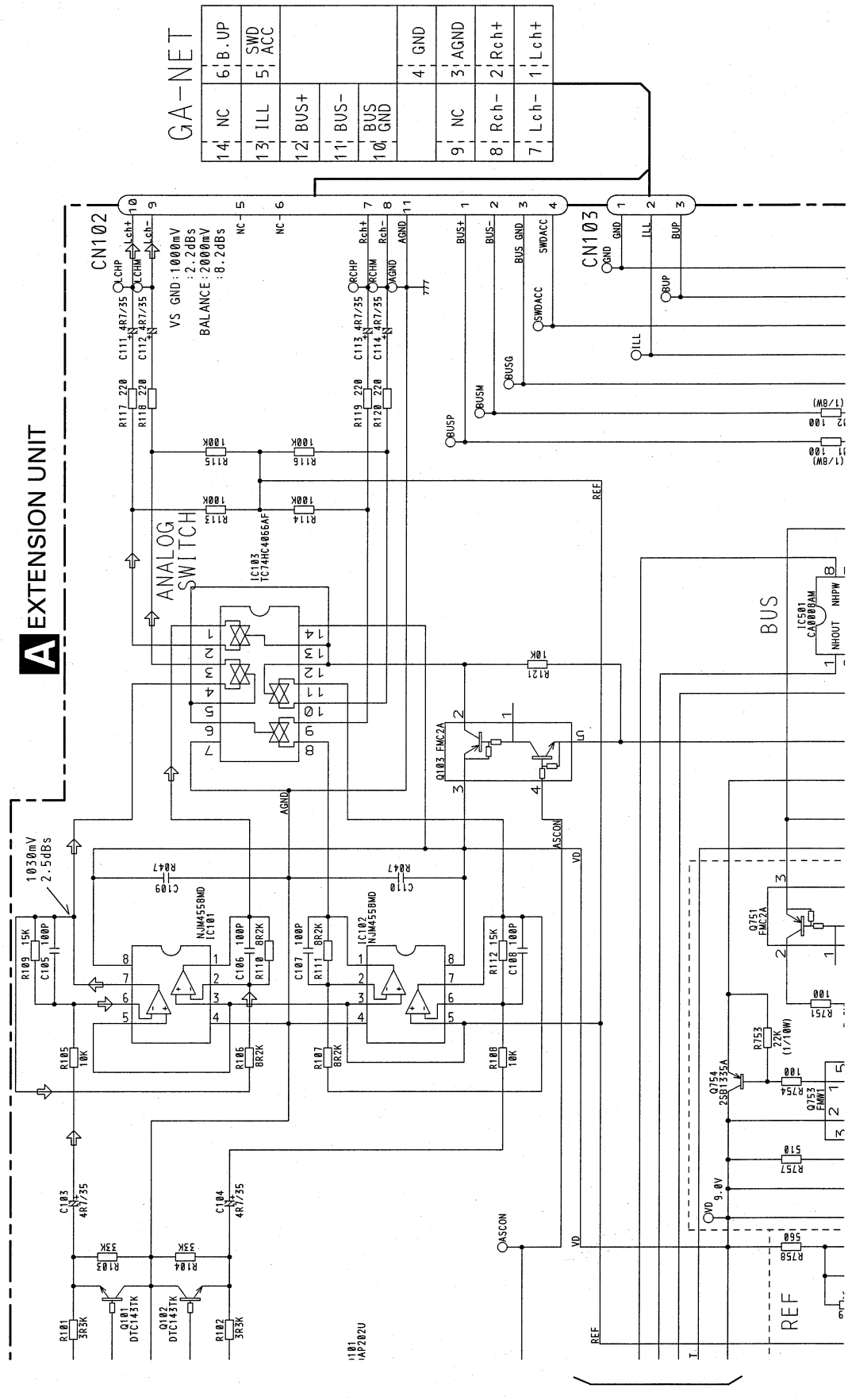
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

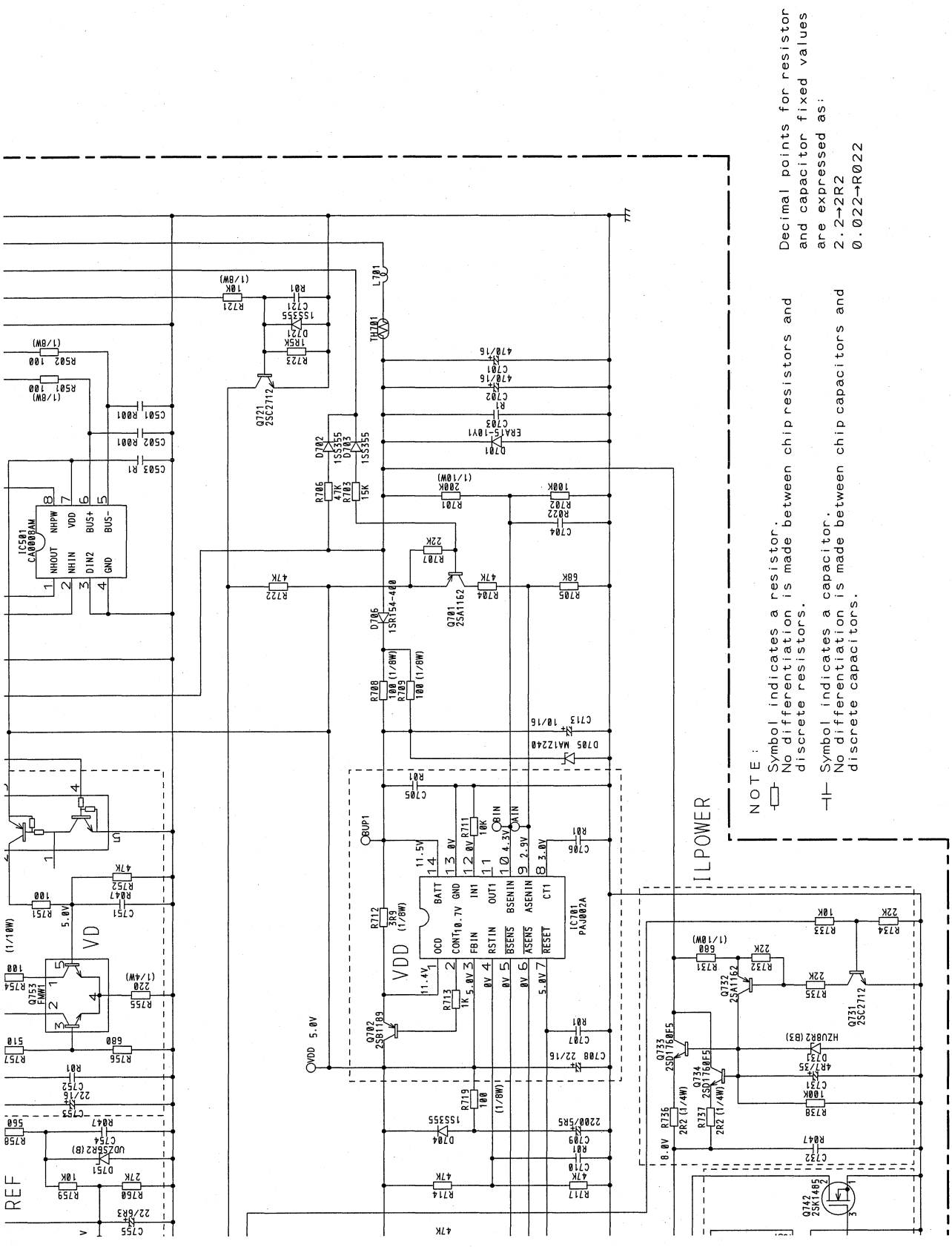
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

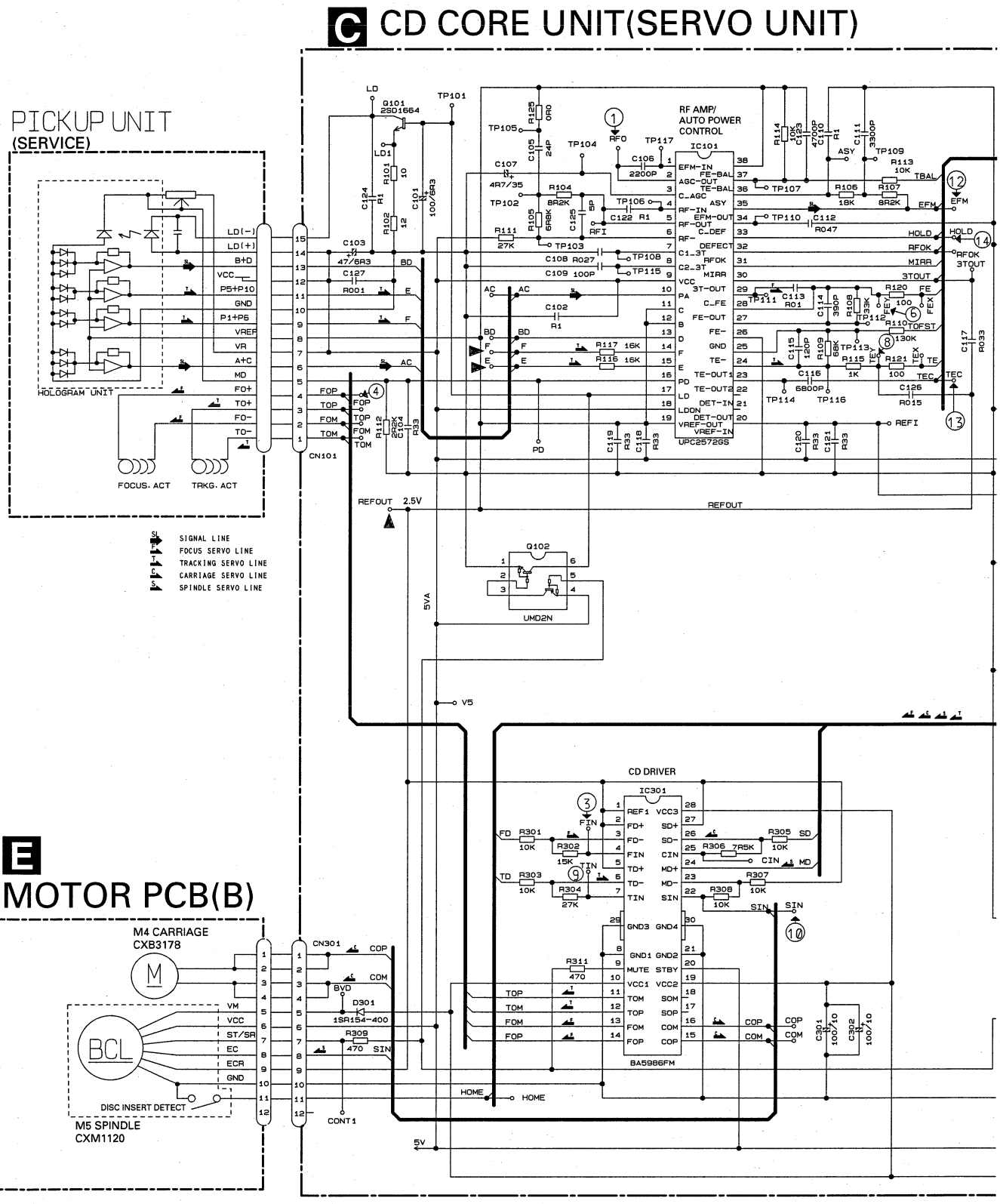

D CD CORE UNIT(STS UNIT)
CN701
CN1101
SYSTEM CONTROLLER
PD5540A
IC601
X601
C5S51451
(6.29MHz)
D101
DAP202U
Q101
DTC143T
Q102
DTC143T
Q104
DTA124EU
TH601
990mV
2.1dBs
REF
VDCONT
NHPOW
NHOUT
NHIN
VD
ASENS
BSENS
ASCON
ISENS
TEMP
ELVSNS
PH3
PH2
PH1
EREF
ADRMON
AVSS
VREF
VCC
ILPOW
EXCE
EXSO
EXMODE
EXSCK
DOORSW
CLAMPSW
ELHOME
XSCK
XSO
XSI
XSTB
XRST
XA0
EJECTKEY
ASENS
NHPOW
LOADSW
ELVSW
MODESW
TEST1
TEST2
BSENS
SBSY
TSENS
RESET
POWER
CONT
XIN
XOUT
VSS
KST1
KST2
KST3
KO1
KO2
EJECT
LOADSW
DOORSW
MODESW
PH3
PH2
PH1
CLAMP
ELHOME
ELVSNS
EMPH
SBSY
SCONT
LOCK
CONT
XRST
XA0
XSTB
XSCK
XSO
XSI
MIRR
FOK
XQOK
XRDE
XWRE
WDSL
CHM1
CHM0
ADRMON
CHDT
XEMP
XWIH
PGND
GND
LOAD
5V
POWER
VD
CG2
CG1
ELV2
ELV1
LO2
LO1
ELVSNS

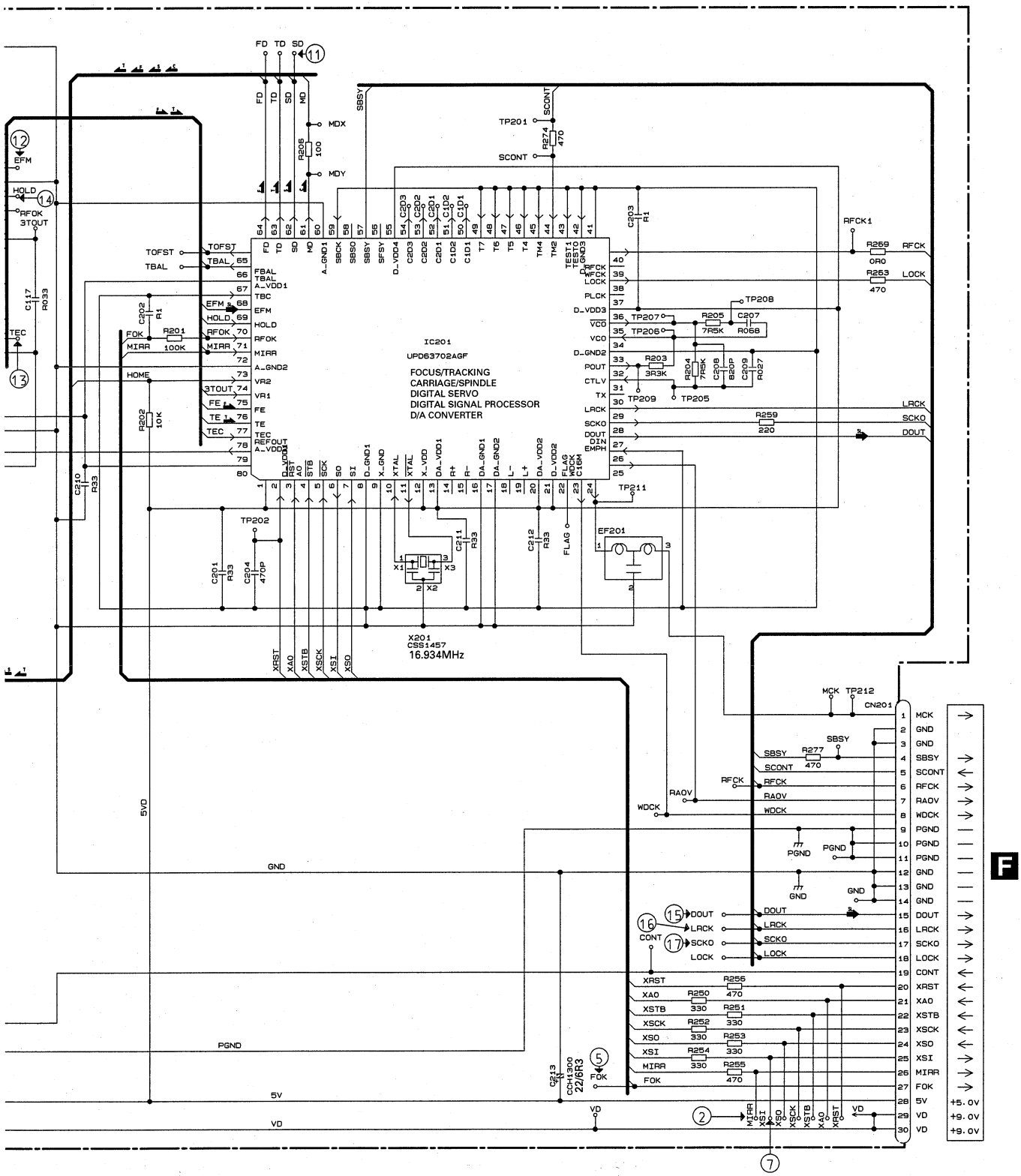

KEYBOARD UNIT
CN701
CN901
LED DRIVER
IC901 BU2892FV
ILL
EJECT
DOOR
MUTE
RESET
TESTIN
DCLOSE
ILL ON :5.3V
ILL OFF:8.0V
A-a
A-b


A-a
A-b
GA-NET
14 NC
13 ILL
12 BUS+
11 BUS-
10 BUS GND
9 NC
8 Rch-
7 Lch-
6 B.UP
5 SWD ACC
4 GND
3 AGND
2 Rch+
1 Lch+
CN102
CN103
EXTENSION UNIT
ANALOG SWITCH
IC103 TC74HC4066AF
BUS
REF
IC101 NJM4558MD
IC102 NJM4558MD
IC501 CA0000AM
Q103 FMC2A
Q751 FMC2A
Q754 2SB1335A
Q753 FMC3
Q101 DTC143TK
Q102 DTC143TK
IAP202U
VS GND :1000mV
BALANCE :2000mV
:2.2dBs
:8.2dBs
1030mV
2.5dBs
9.0V
BUSP
BUSM
BUSG
BUS GND
SWDACC
BUP
ILL
GND
ASCON
VD
AGND
NHOUT
NHPW


A-a A-b
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
NOTE:
Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.
ILPOWER
VDD
REF
IC501 CA0003AM
IC701 PAJ002A
Q701 2SA1162
Q702 2SB1689
Q721 2SC2712
Q731 2SC2712
Q732 2SA1162
Q733 2SD1760F5
Q734 2SD1760F5
Q742 2SK1485
D705 MA122400
D706 1SR154-400
THR701
L701
2

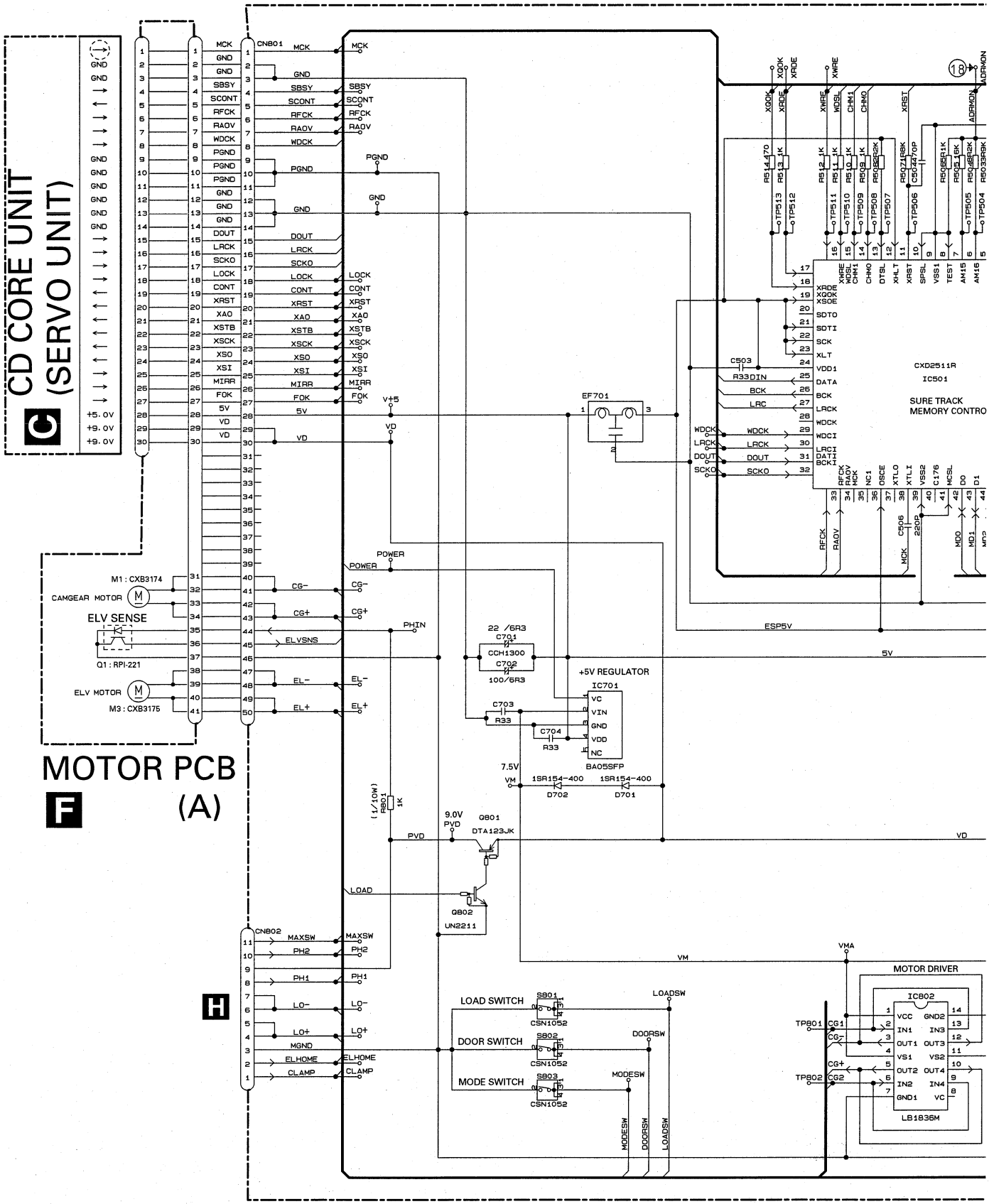
3.2 CD CORE UNIT(SERVO UNIT)



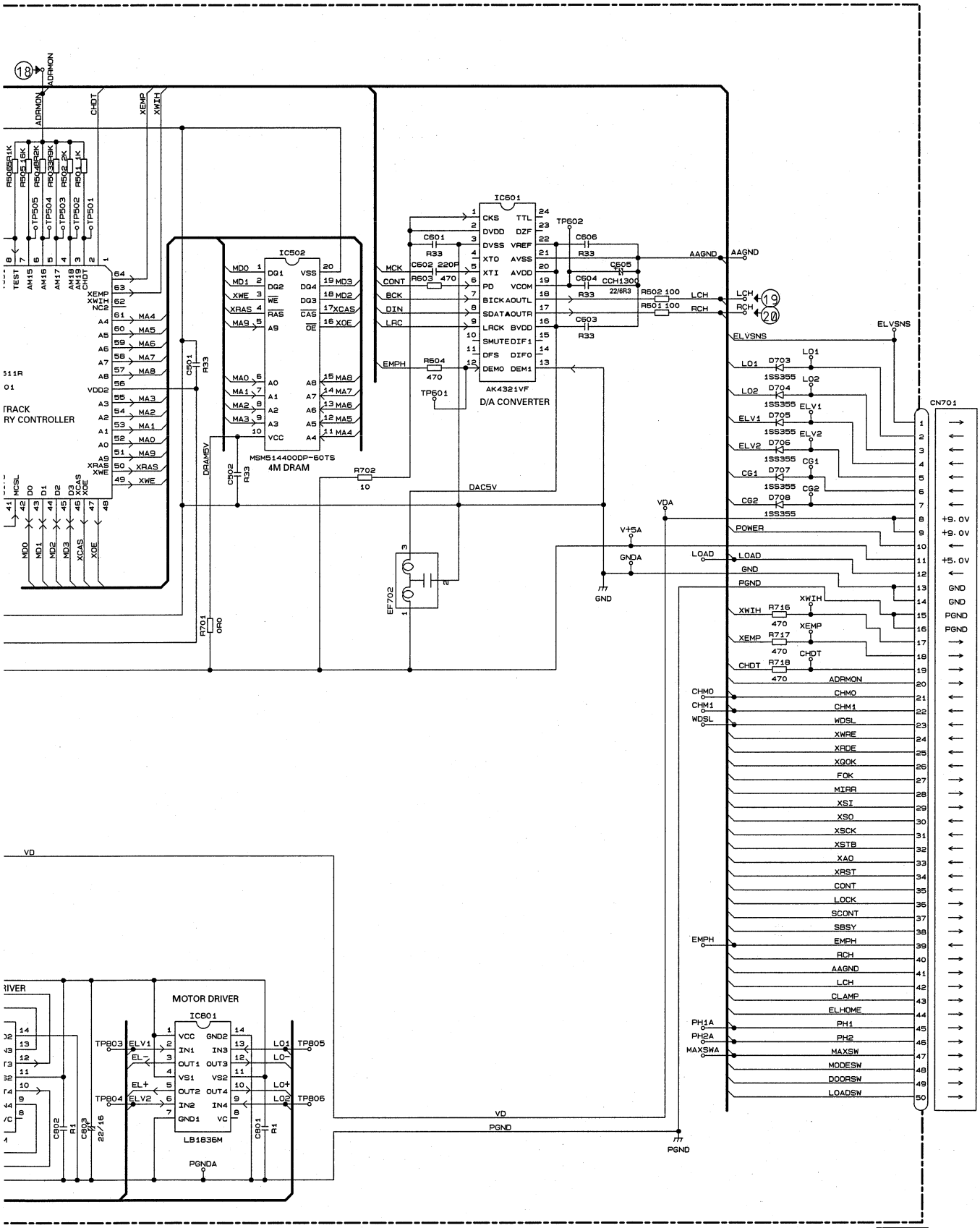

IC201
UPD63702AGF
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL PROCESSOR
D/A CONVERTER
X201
CSS1457
16.934MHz
CN201
MCK
GND
SBSY
SCONT
RFCK
RAOV
WDCK
PGND
DOUT
LRCK
SCKO
LOCK
CONT
XRST
XA0
XSTB
XSCK
XSO
XSI
MIRR
FOK
5V
VD
+5.0V
+9.0V
+9.0V

3.3 CD CORE UNIT(STS UNIT)

D CD CORE UNIT(STS UNIT)



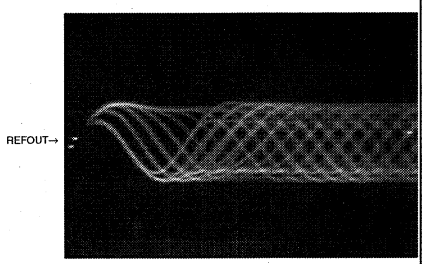
D F


IC601
AK4321VF
D/A CONVERTER
IC502
MSM514400DP-60TS
4M DRAM
MOTOR DRIVER
IC801
LB1836M
CN701
CN101
TRACK
RY CONTROLLER
RIVER
ADRMON
CHDT
XEMP
XWIH
MCK
CONT
BCK
DIN
LRC
EMPH
DRAM5V
DAC5V
VDA
V+5A
GNDA
GND
PGND
VD
AAGND
LCH
RCH
ELVSNS
LO1
LO2
ELV1
ELV2
CG1
CG2
POWER
LOAD
XWIH
XEMP
CHDT
CHM0
CHM1
WDSL
XWRE
XRDE
XQOK
FOK
MIAR
XSI
XSO
XSCK
XSTB
XAO
XRST
CONT
LOCK
SCONT
SBSY
EMPH
RCH
AAGND
LCH
CLAMP
ELHOME
PH1A
PH2A
MAXSWA
PH1
PH2
MAXSW
MODESW
DOORSW
LOADSW

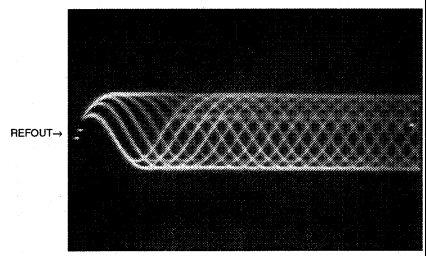
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFOUT:2.5V

● Waveforms

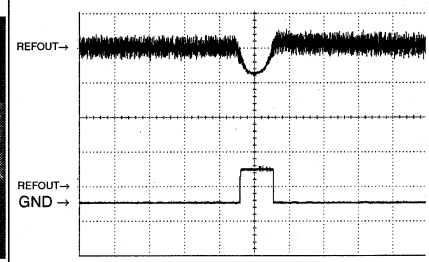
① RFO 0.5V/div. 0.2µs/div.
Normal mode: play



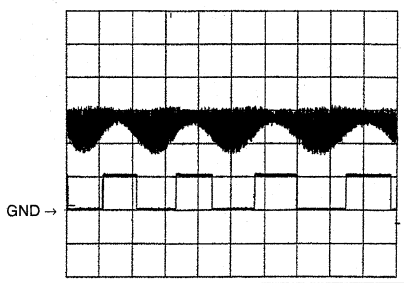
① RFO 0.5V/div. 0.5µs/div.
Test mode



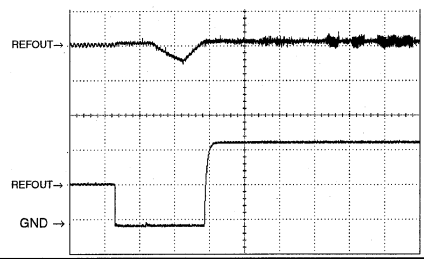
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Normal mode: The defect part passes 500µs/div.



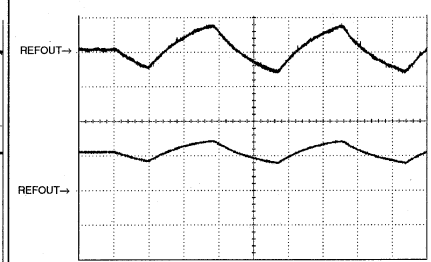
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Test mode: Tracking open



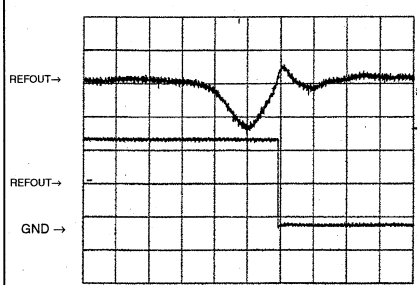
③ CH1: FIN 0.5V/div. 0.2s/div.
⑤ CH2: FOK 2V/div.
Normal mode: Focus close



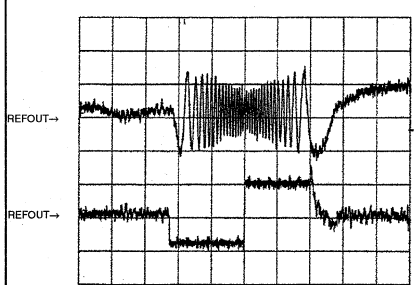
③ CH1: FIN 0.5V/div. 0.2s/div.
④ CH2: FOP 2V/div.
Test mode: No disc, Focus close



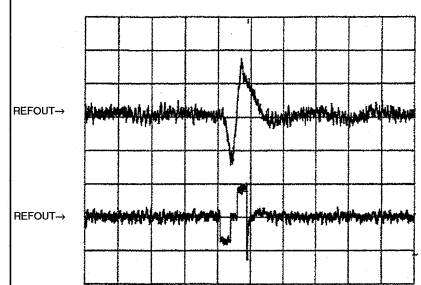
⑥ CH1: FEY 0.5V/div. 1ms/div.
⑦ CH2: XSI 2V/div.
Normal mode: Focus close



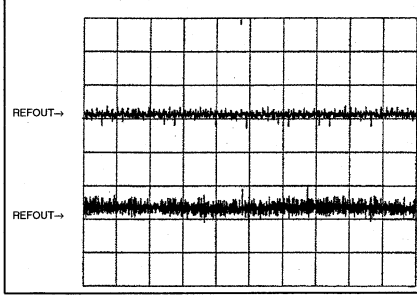
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: 32 tracks jump (FWD)



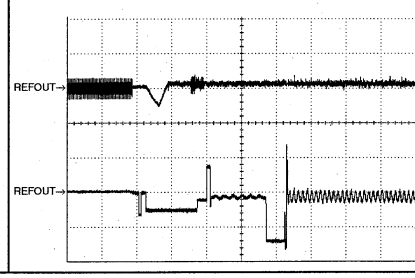
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: Single jump (FWD)



⑥ CH1: FEY 0.1V/div. 20ms/div.
③ CH2: FIN 0.2V/div.
Normal mode: Play

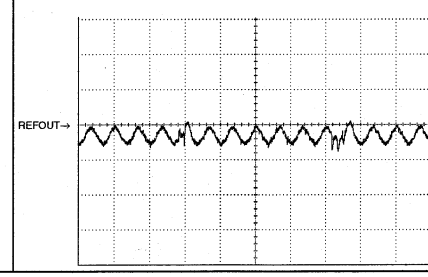


③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close

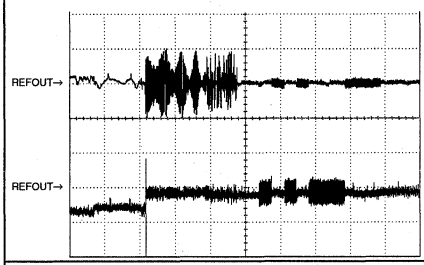


⑩ SIN 0.5V/div. 0.1s/div.

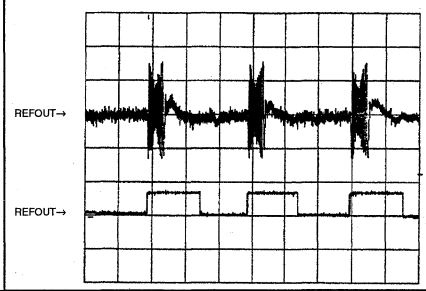
Normal mode: Play



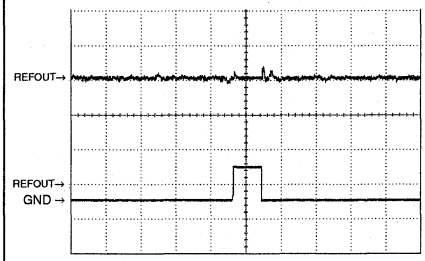
⑧ CH1: TEY 0.5V/div. 0.2s/div.
⑥ CH2: FEY 0.1V/div.
Normal mode: AGC after focus close



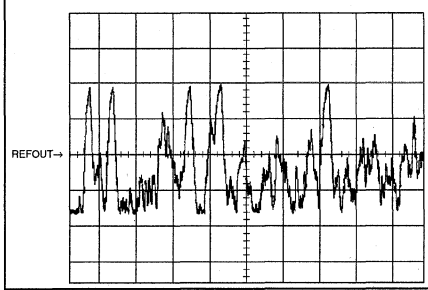
⑧ CH1: TEY 0.5V/div. 5ms/div.
⑪ CH2: SD 0.5V/div.



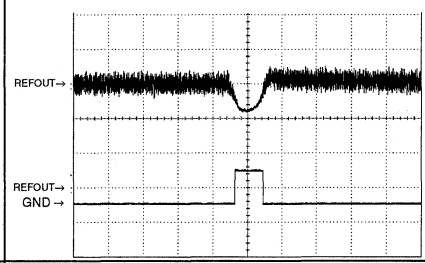
③ CH1: FIN 1V/div.
⑭ CH2: HOLD 5V/div. 500µs/div.
Normal mode: The defect part passes 800µm



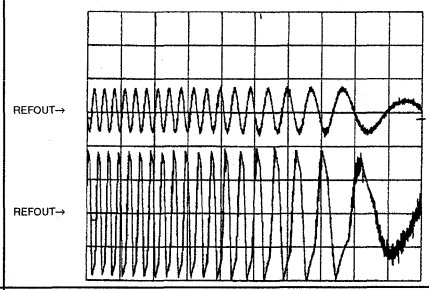
⑩ SIN 1V/div. 10ms/div.
Long Search



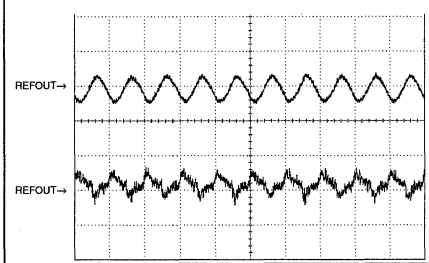
① CH1: RFO 1V/div. 500µs/div.
⑭ CH2: HOLD 5V/div.
Normal mode: The defect part passes 800µm



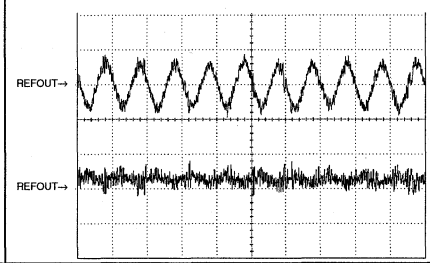
⑧ CH1: TEY 1V/div. 2ms/div.
⑬ CH2: TEC 1V/div.
Test mode: Focus close
Tracking open



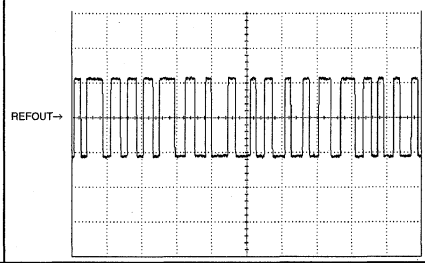
⑥ CH1: FEY 0.2V/div. 1ms/div.
③ CH2: FIN 0.5V/div.
Normal mode: During AGC



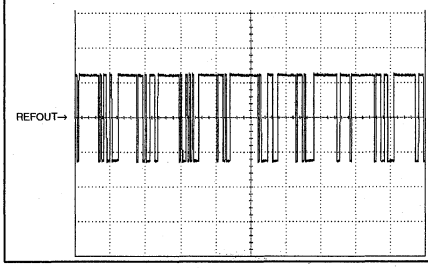
⑧ CH1: TEY 0.2V/div. 1ms/div.
⑨ CH2: TIN 0.5V/div.
Normal mode: During AGC



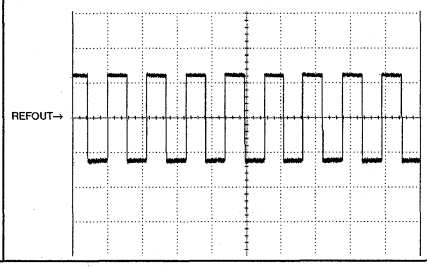
⑫ EFM 1V/div. 2µs/div.
Play



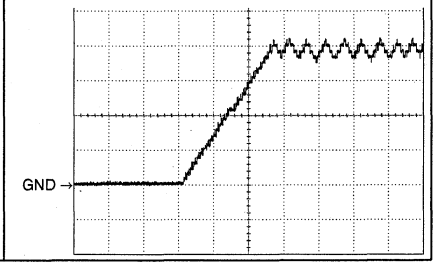
⑮ Dout 2V/div. 5µs/div.
Play

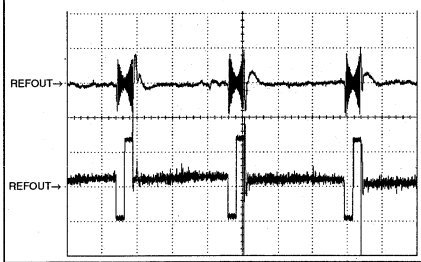
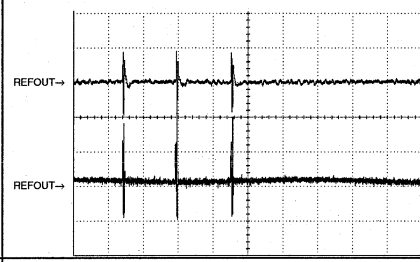
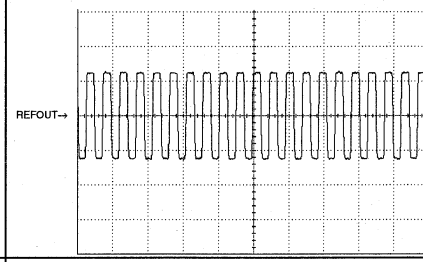
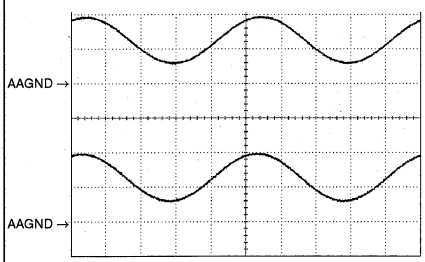


⑯ LRCK 2V/div. 10µs/div.

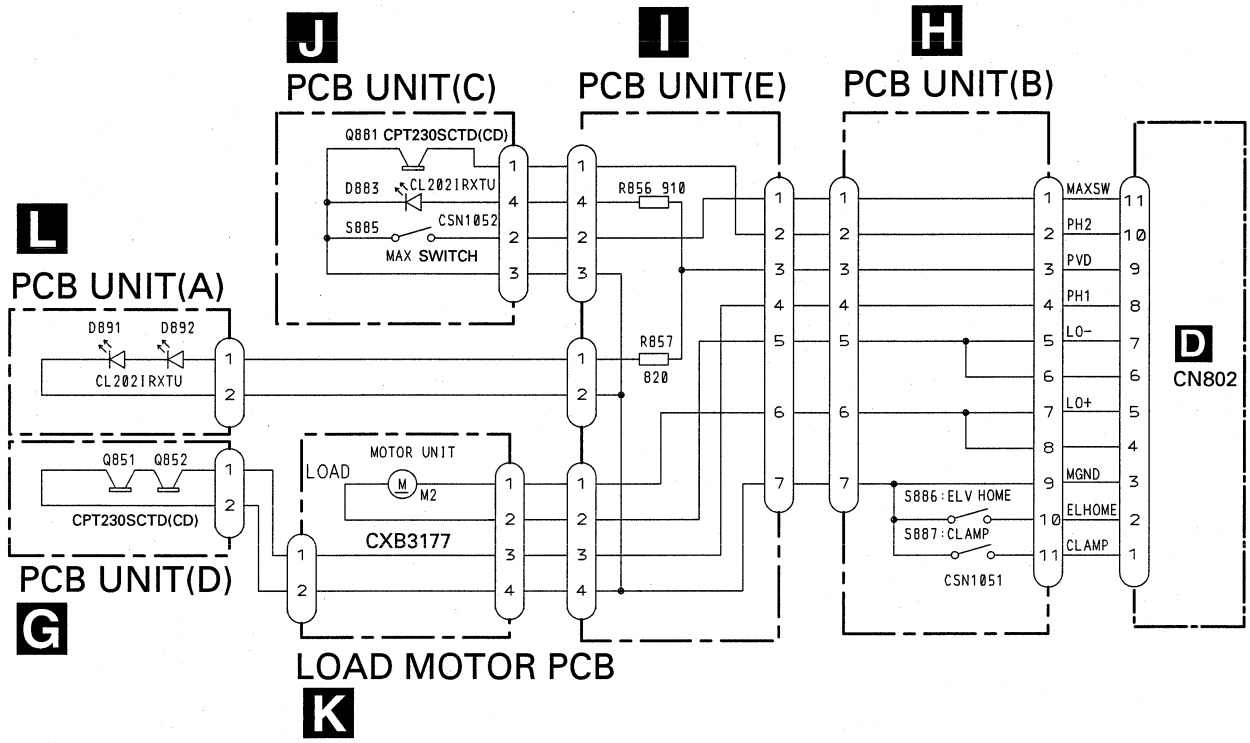


⑱ ADRMON 1V/div. 1s/div.
Normal mode: Starting play



⑧ CH1: TEY 0.5V/div. ⑨ CH2: TIN 0.5V/div. 5ms/div. Test mode: 100 tracks jump(FWD) 	⑧ CH1: TEY 0.5V/div. ⑨ CH2: TIN 0.5V/div. 10ms/div. Normal mode: Play 	⑰ SCKO 2V/div. 500ns/div. Play 
⑳ CH1: RCH 2V/div. ⑲ CH2: LCH 2V/div. 200µs/div. Normal mode: PLAY (0dB,1kHz) 		

3.4 PCB UNIT(A,B,C,D,E), LOAD MOTOR PCB

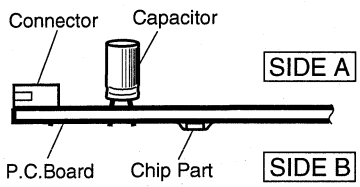


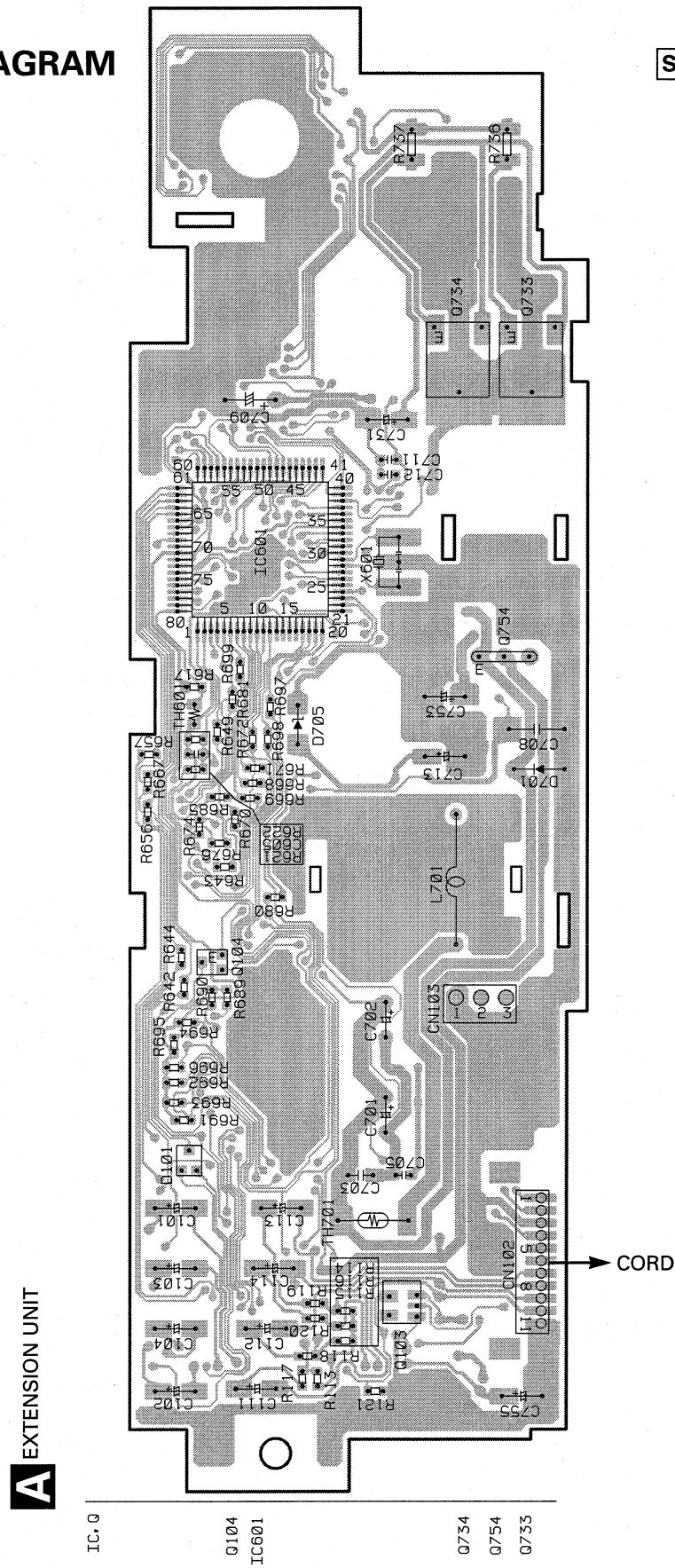
4. PCB CONNECTION DIAGRAM

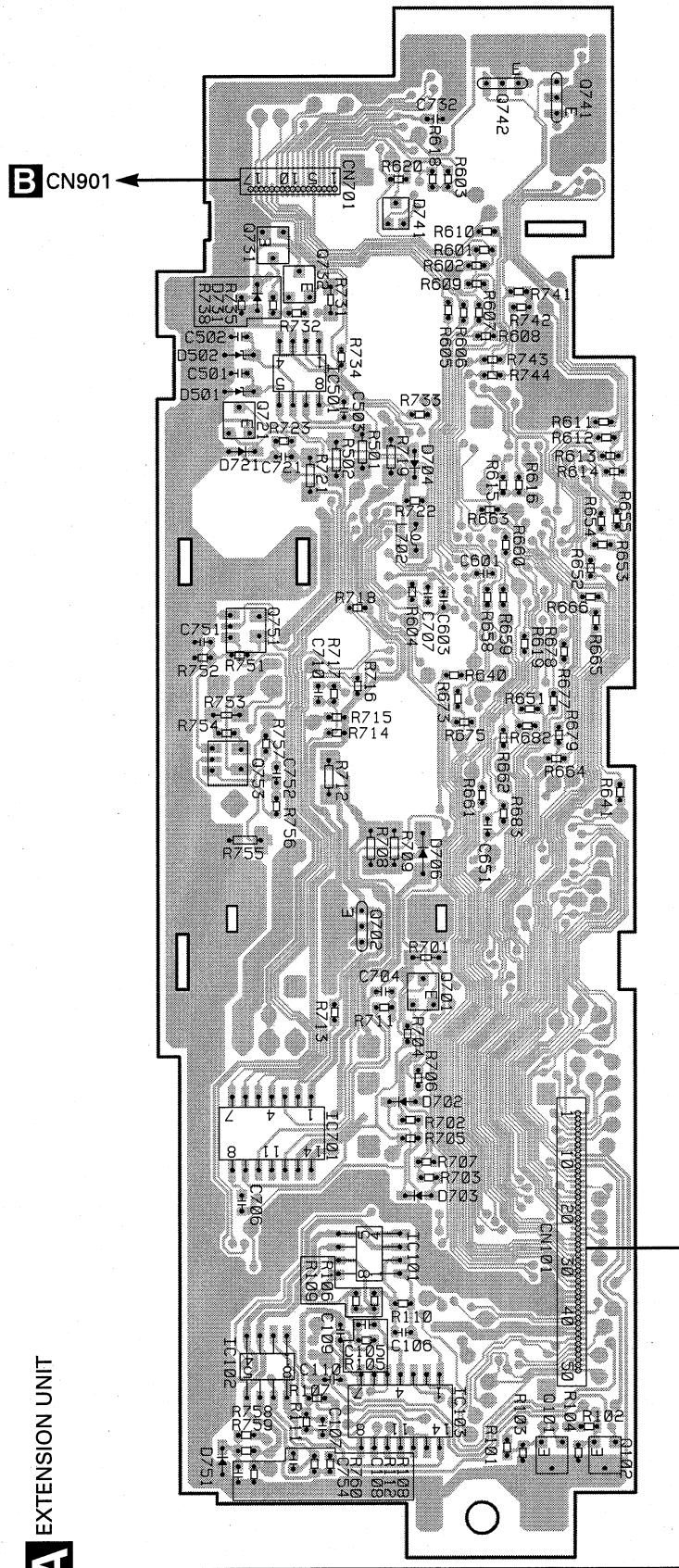
4.1 EXTENSION UNIT

NOTE FOR PCB DIAGRAMS

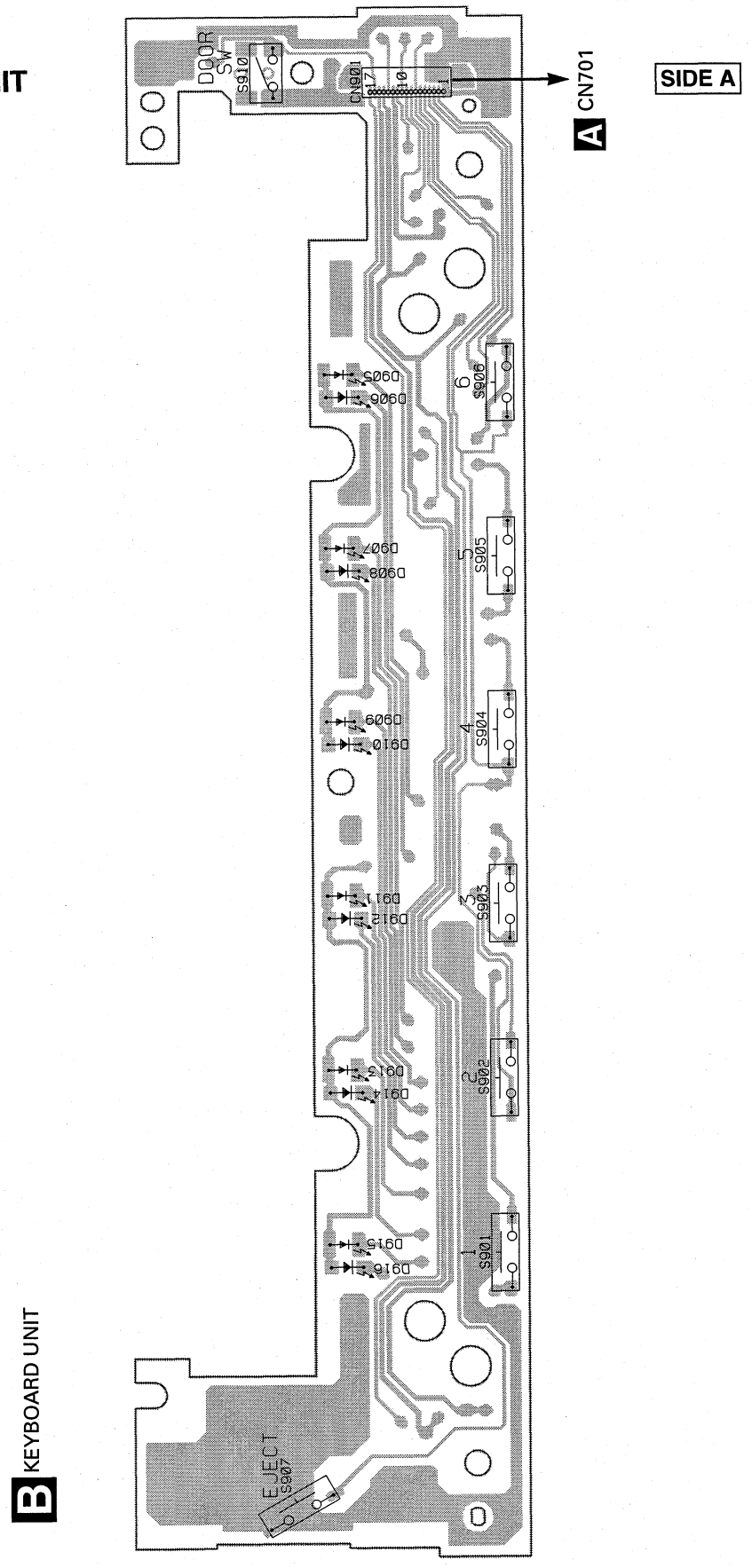
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



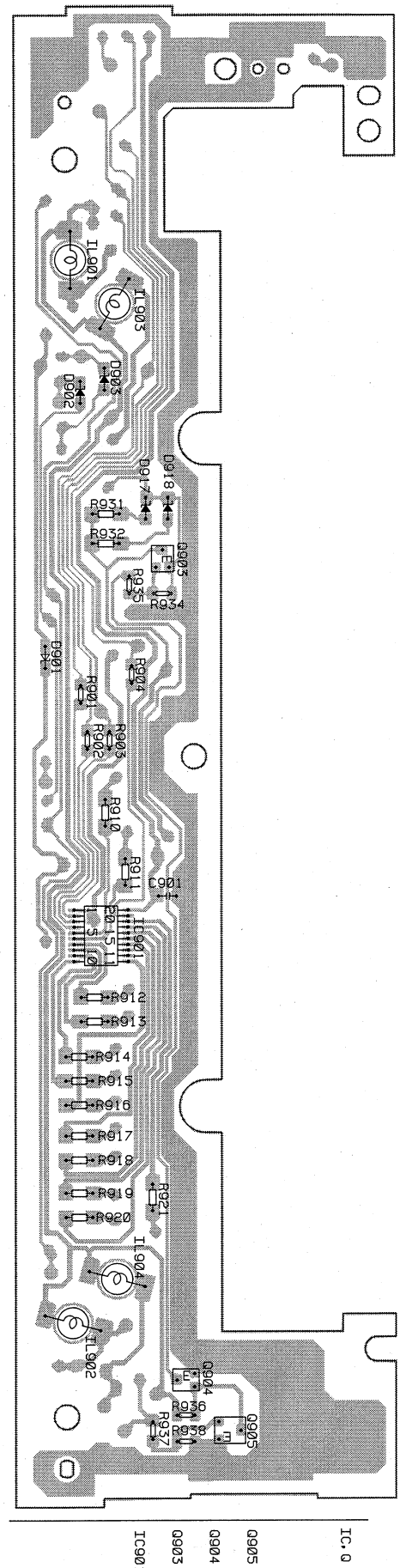



SIDE B
B CN901
D CN701
A EXTENSION UNIT
IC, Q
Q102
Q101
Q741
Q742
IC103
Q701
IC101
Q702
Q103
Q732
IC501
IC701
Q753
Q721
Q751
Q731
IC102

4.2 KEYBOARD UNIT



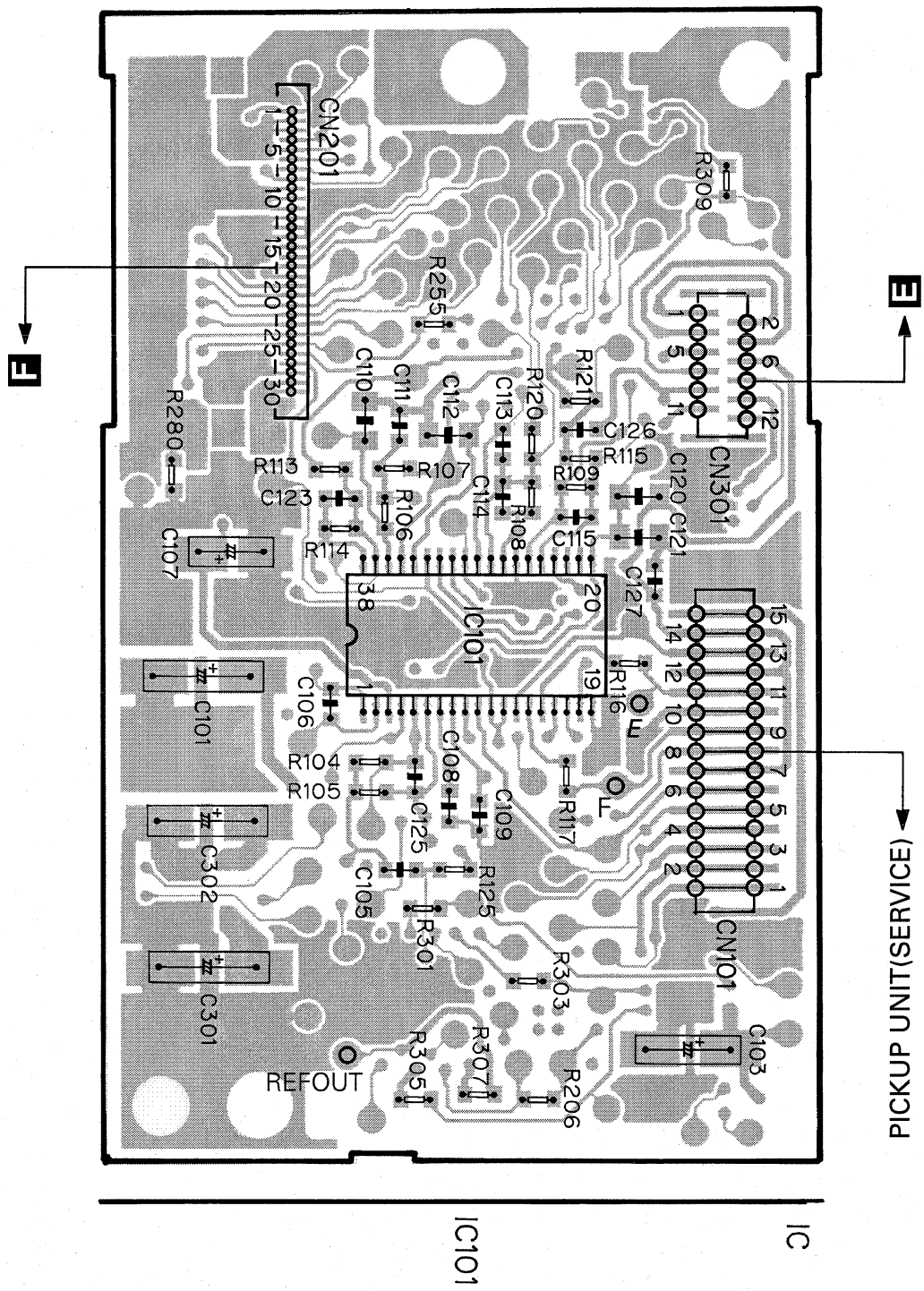
SIDE B



B KEYBOARD UNIT

4.3 CD CORE UNIT(SERVO UNIT)

SIDE A

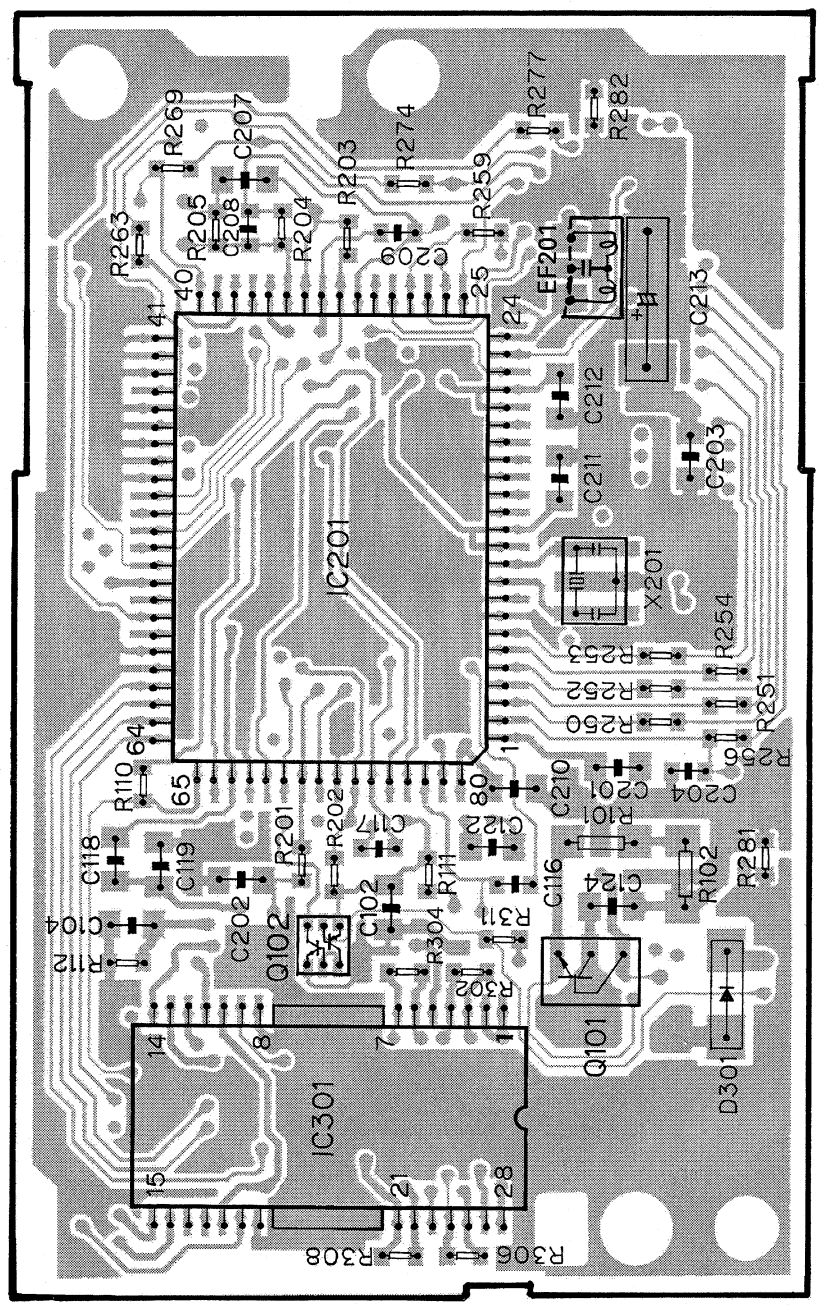


IC, Q

IC301
Q102
IC201

Q101

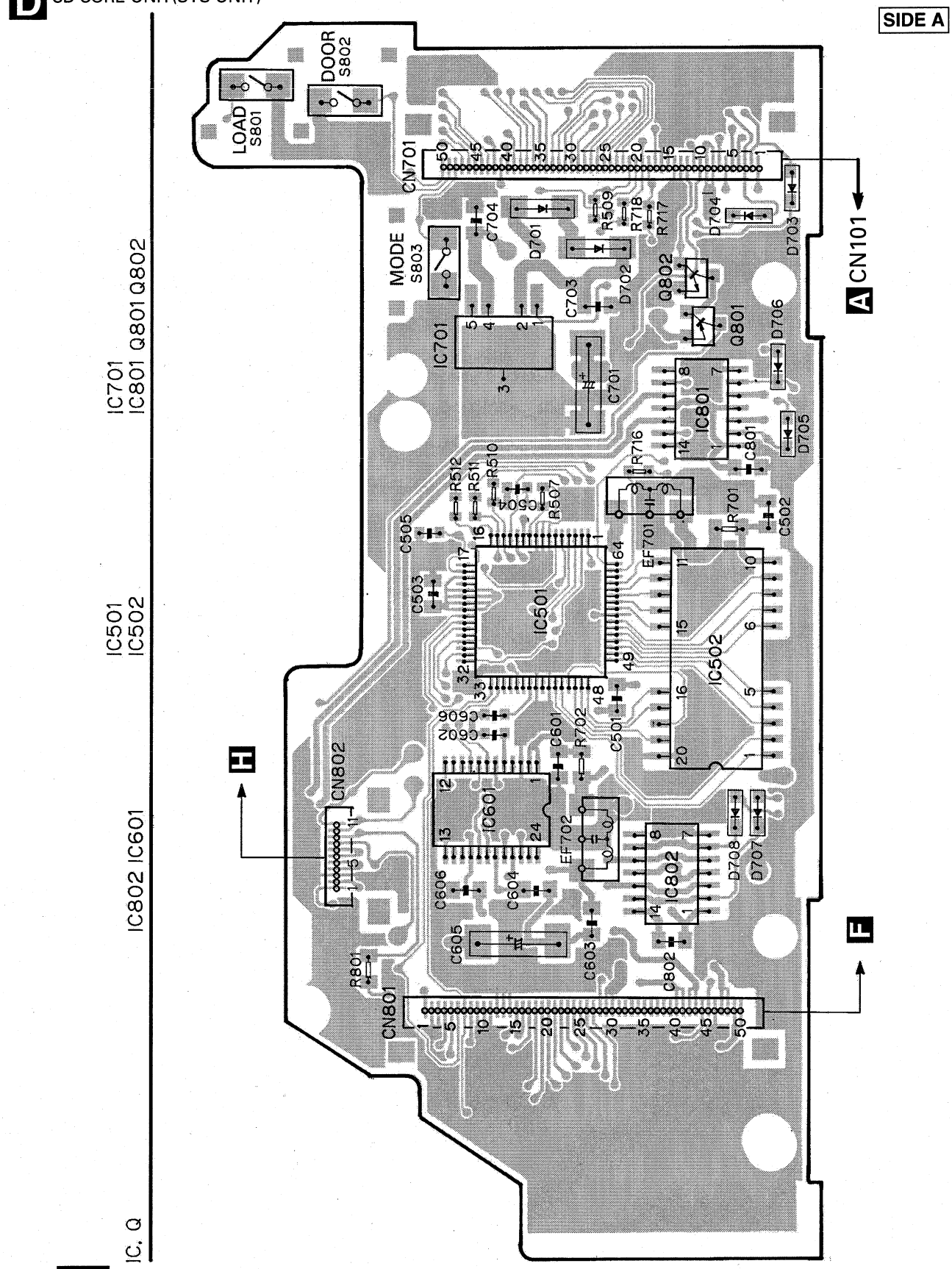
SIDE B



C CD CORE UNIT(SERVO UNIT)

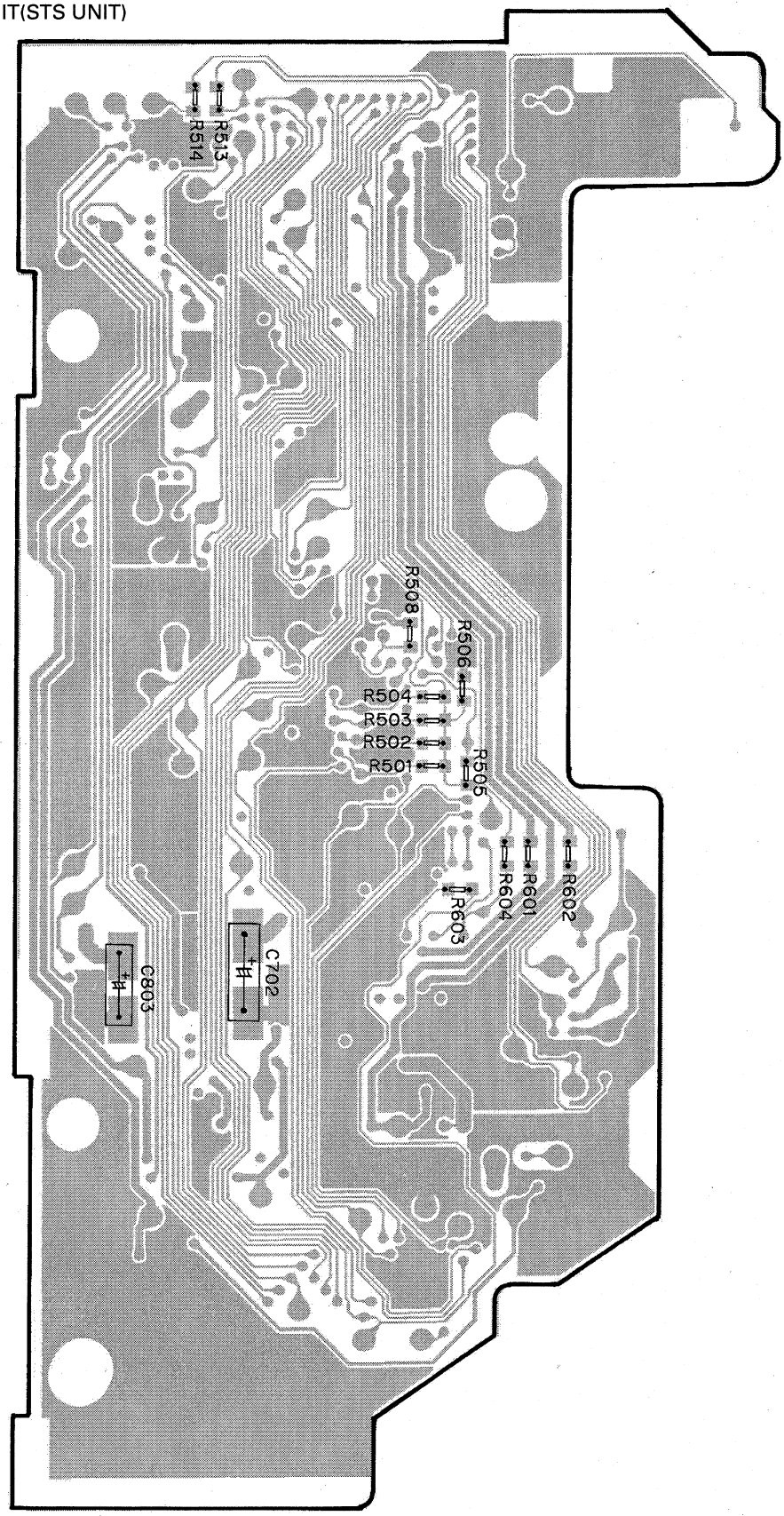
4.4 CD CORE UNIT(STS UNIT)

D CD CORE UNIT(STS UNIT)



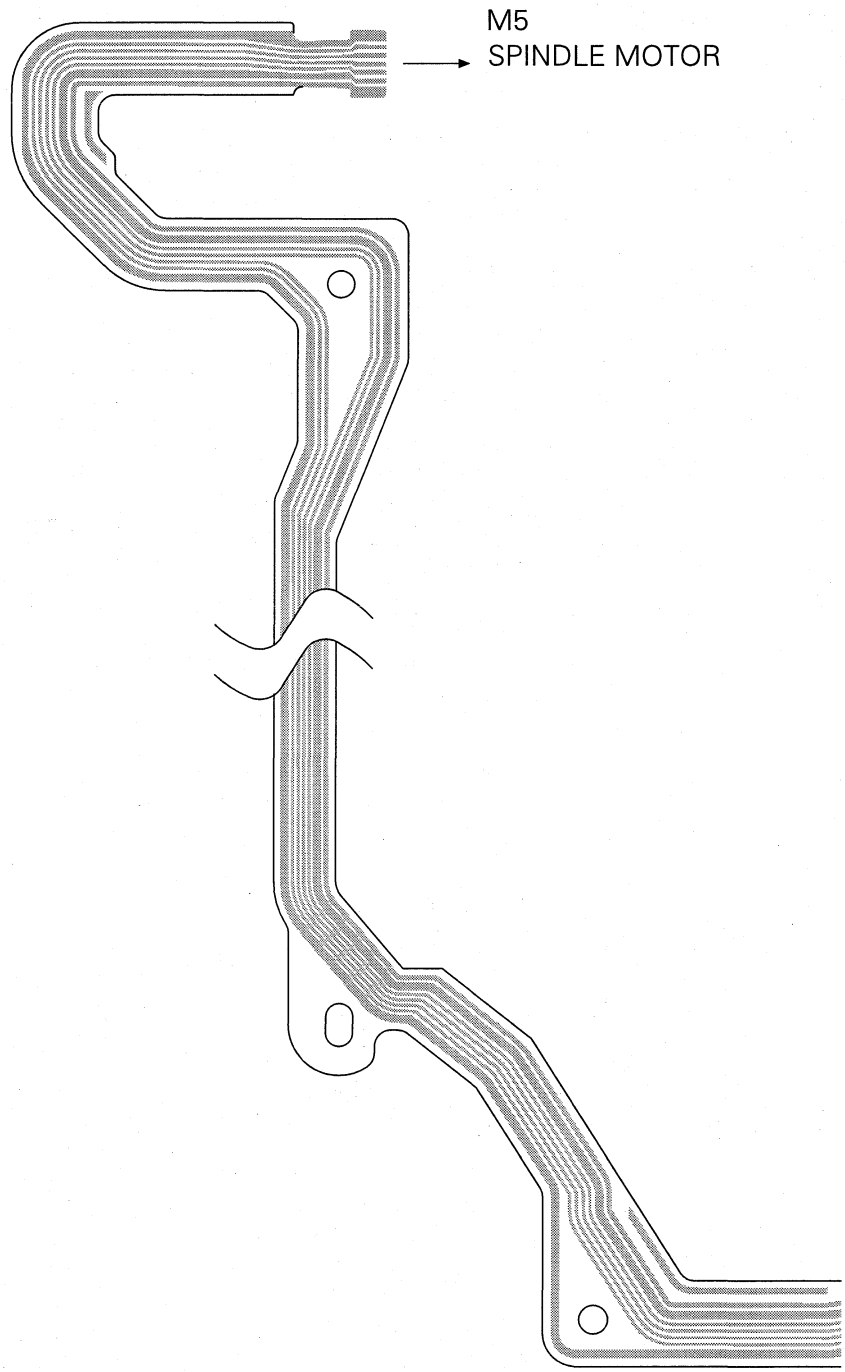
D CD CORE UNIT(STS UNIT)

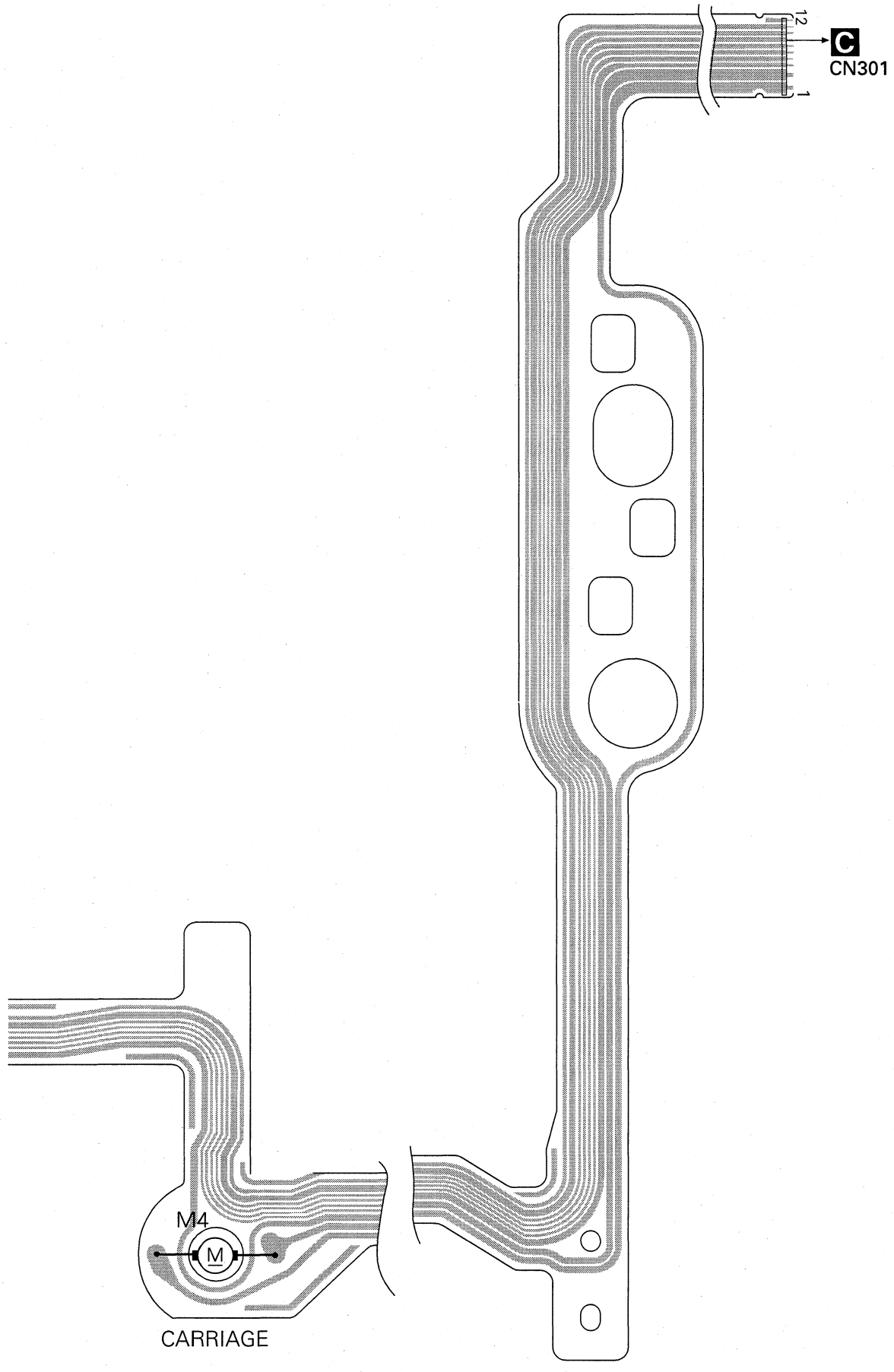
SIDE B



4.5 MOTOR PCB(B)

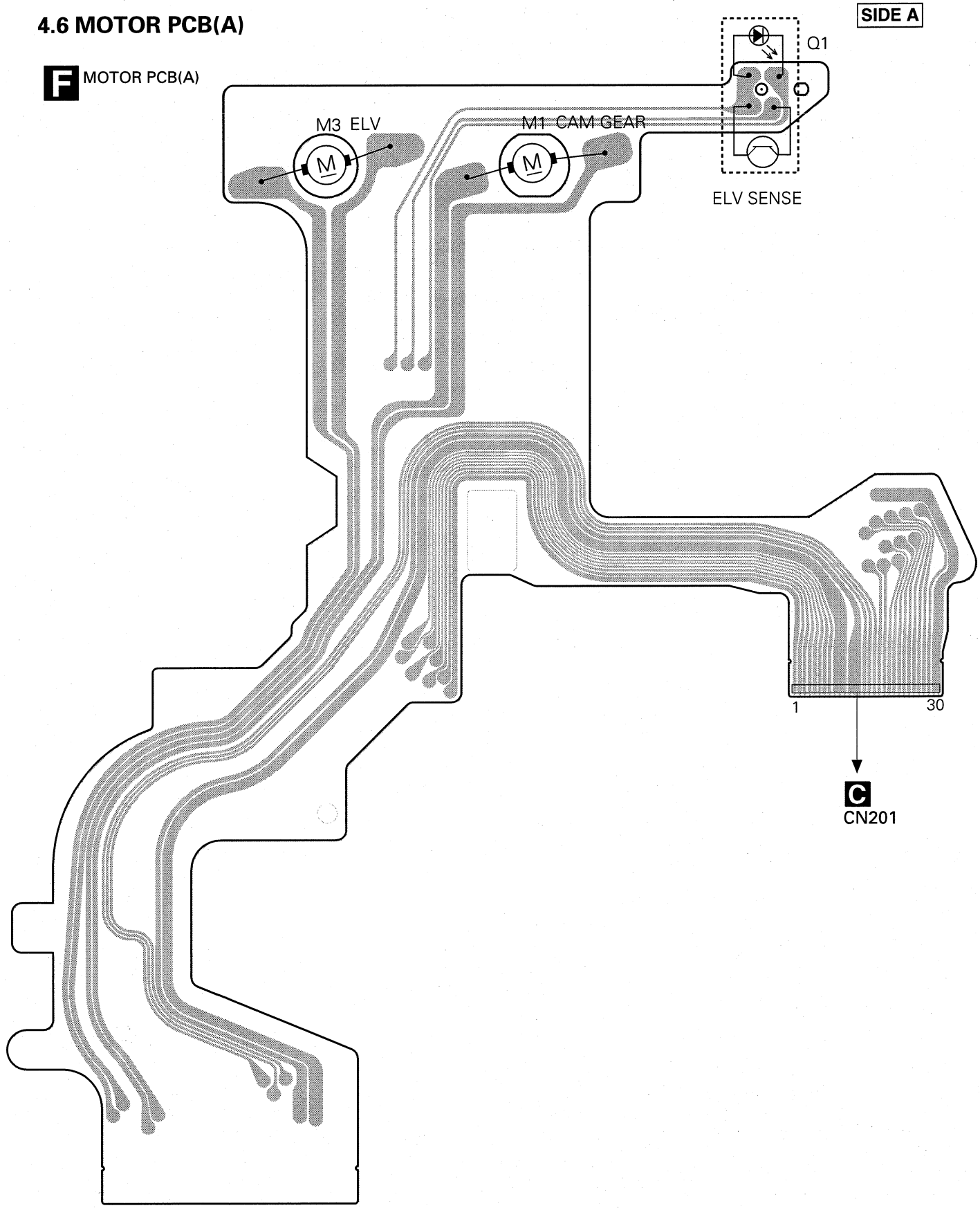
E MOTOR PCB(B)



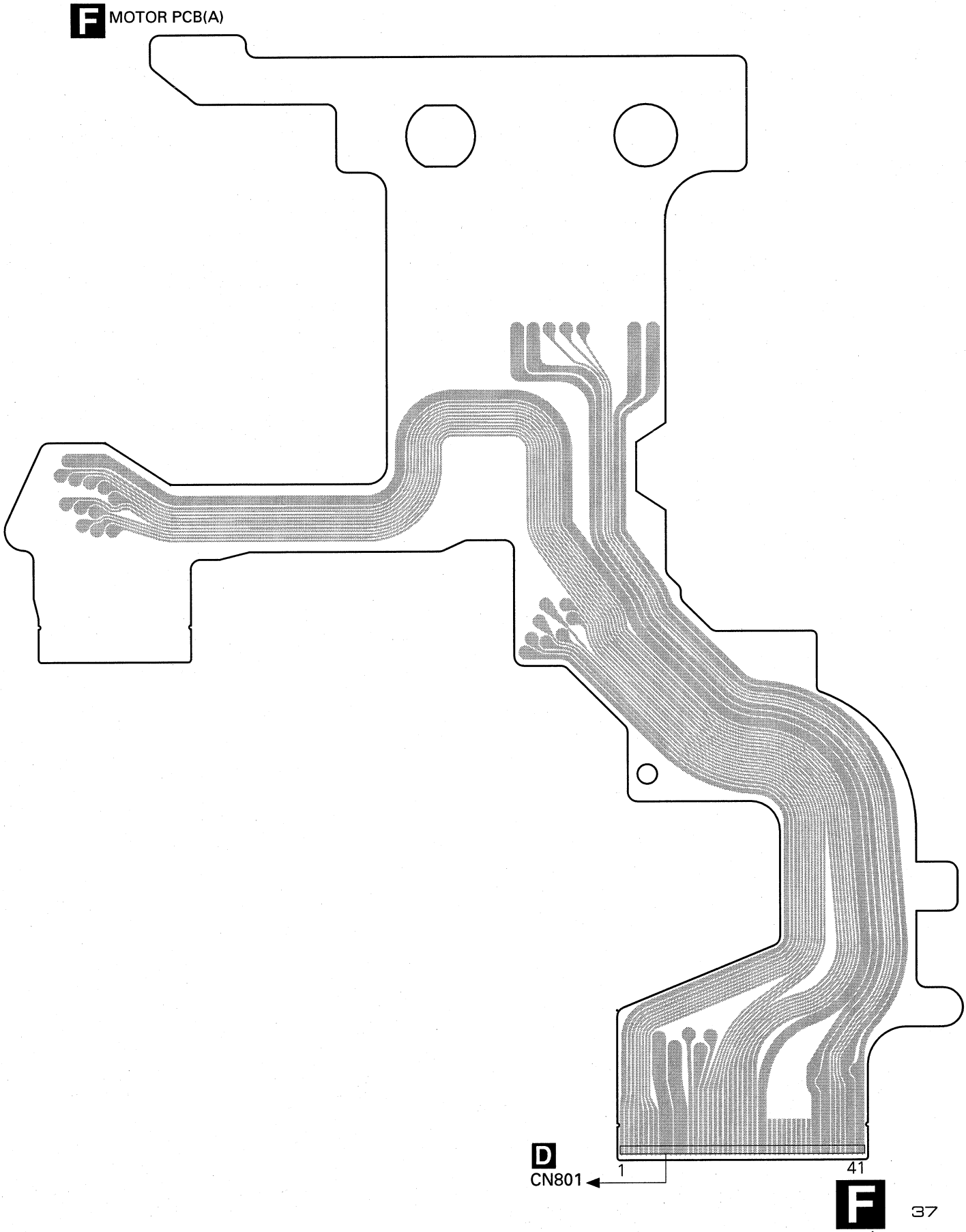

12
1
C
CN301
M4
M
CARRIAGE

4.6 MOTOR PCB(A)

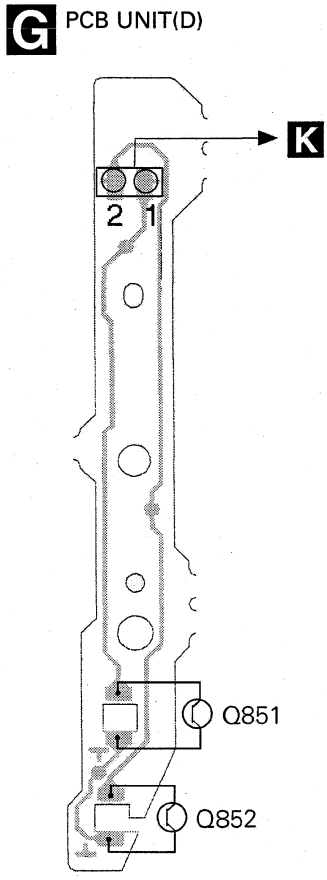
SIDE A



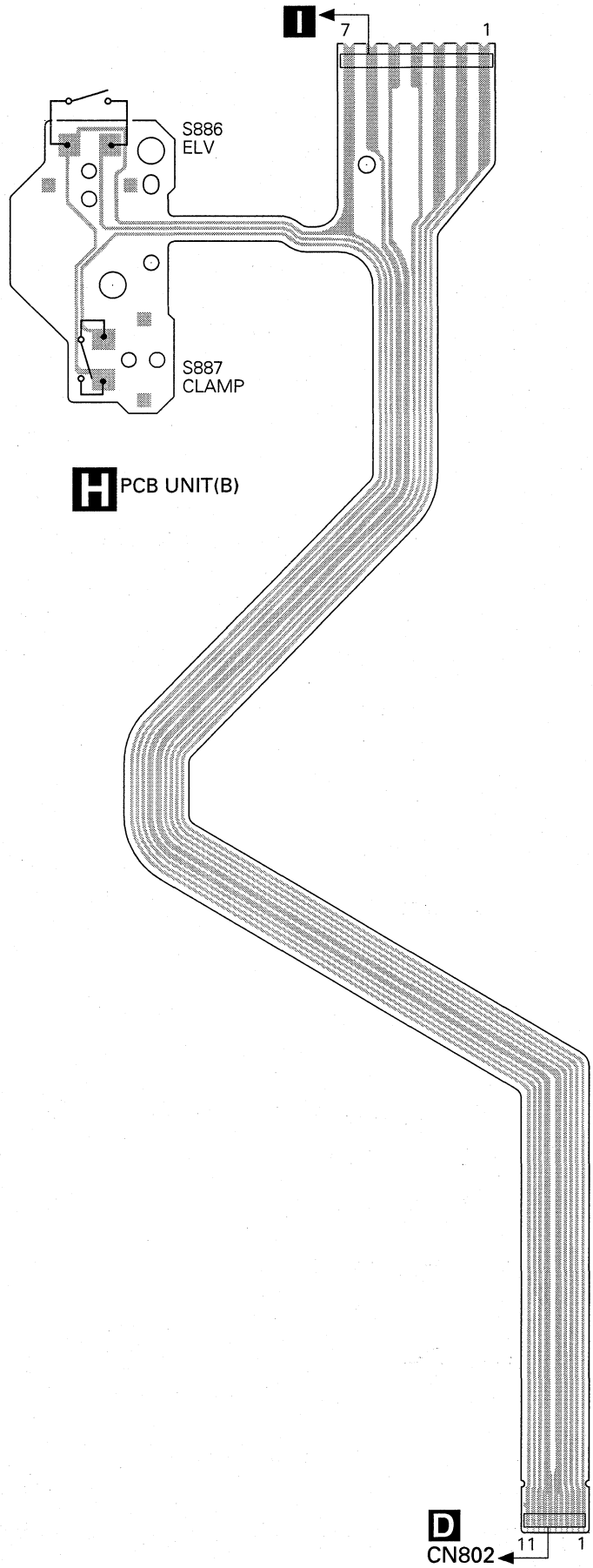
SIDE B



4.7 PCB UNIT(D)



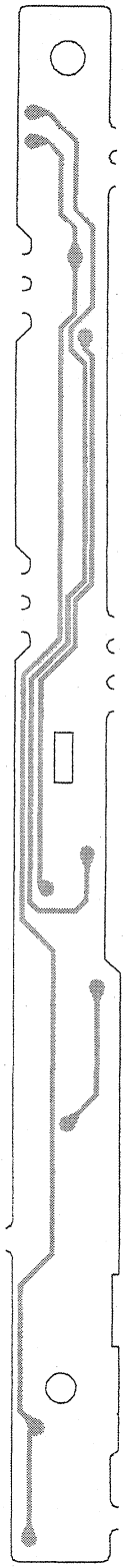
4.8 PCB UNIT(B)



4.9 PCB UNIT(E)

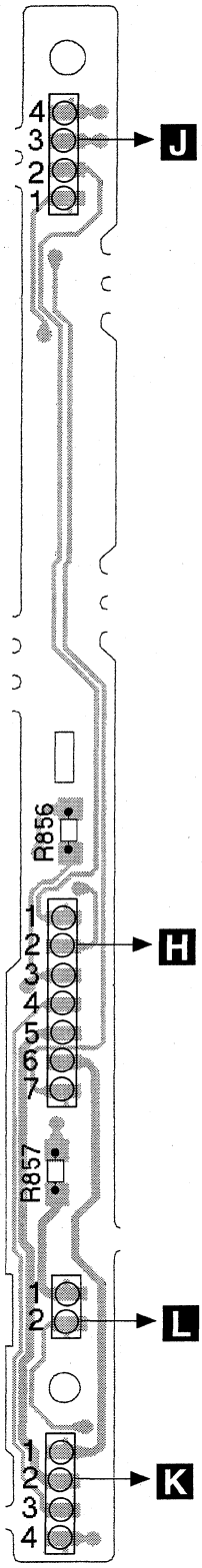
I PCB UNIT(E)

SIDE A



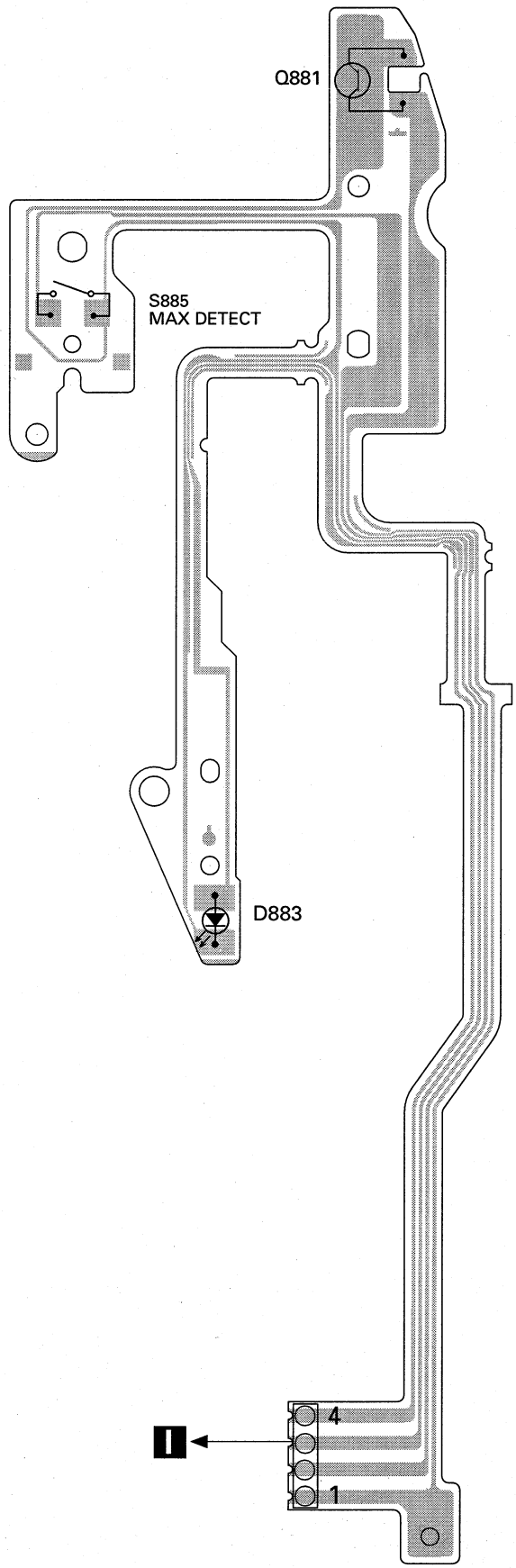
I PCB UNIT(E)

SIDE B

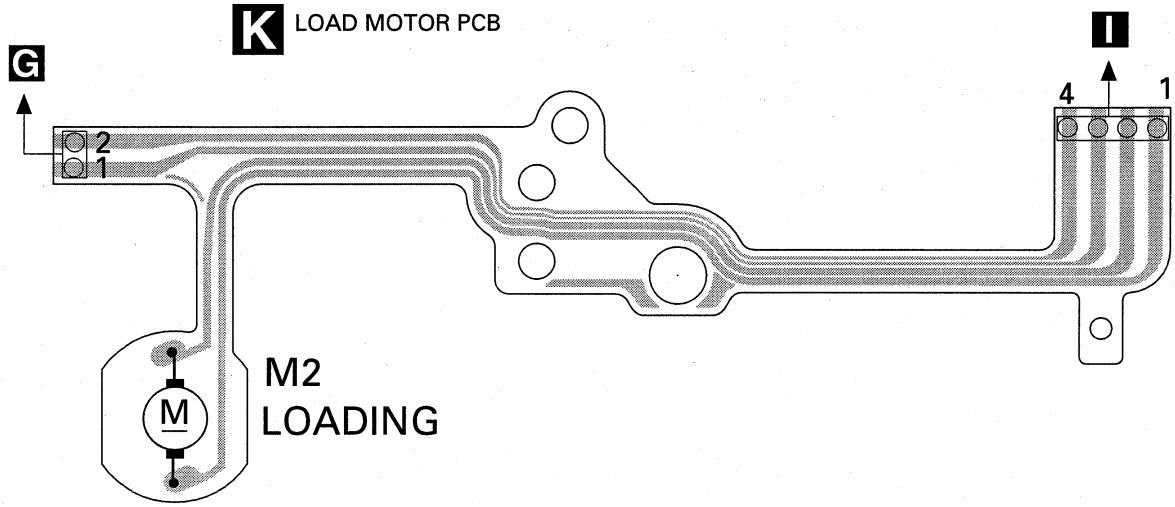


4.10 PCB UNIT(C)

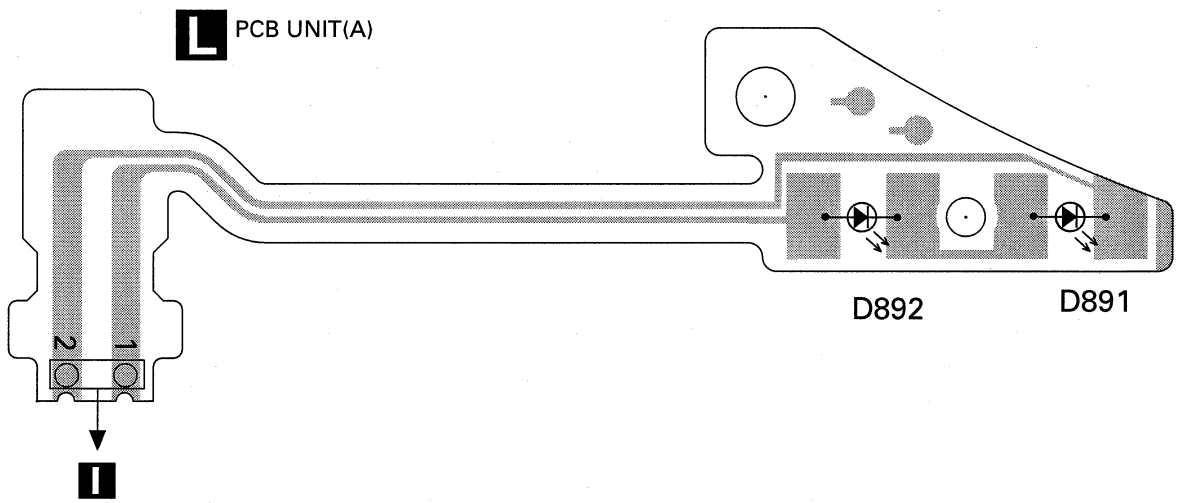
J PCB UNIT(C)



4.11 LOAD MOTOR PCB



4.12 PCB UNIT(A)



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A Unit Number : CWM6677
Unit Name : Extension Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	101	IC	NJM4558MD
IC	102	IC	NJM4558MD
IC	103	IC	TC74HC4066AF
IC	501	IC	CA0008AM
IC	601	IC	PD5540A
IC	701	IC	PAJ002A
Q	101	Transistor	DTC143TK
Q	102	Transistor	DTC143TK
Q	103	Transistor	FMC2A
Q	104	Transistor	DTA124EU
Q	701	Transistor	2SA1162
Q	702	Transistor	2SB1189
Q	721	Transistor	2SC2712
Q	731	Transistor	2SC2712
Q	732	Transistor	2SA1162
Q	733	Transistor	2SD1760F5
Q	734	Transistor	2SD1760F5
Q	741	Transistor	2SK1485
Q	742	Transistor	2SK1485
Q	751	Transistor	FMC2A
Q	753	Transistor	FMW1
Q	754	Transistor	2SB1335A
D	101	Diode	DAP202U
D	701	Diode	ERA15-10Y1
D	702	Diode	1SS355
D	703	Diode	1SS355
D	704	Diode	1SS355
D	705	Diode	MA1Z240
D	706	Diode	1SR154-400
D	721	Diode	1SS355
D	731	Diode	HZU8R2(B3)
D	741	Diode	DAN202U
D	751	Diode	UDZS6R2(B)
L	701	Coil	CTH1190
L	702	Inductor	LCTB100K2125
TH	601	Thermistor	CCX1032
TH	701	Switch	CCX1047
X	601	Radiator 6.290MHz	CSS1451

RESISTORS

=====Circuit Symbol and No.		===Part Name	Part No.
R	101		RS1/16S332J
R	102		RS1/16S332J
R	103		RS1/16S333J
R	104		RS1/16S333J
R	105		RS1/16S103J
R	106		RS1/16S822J
R	107		RS1/16S822J
R	108		RS1/16S103J
R	109		RS1/16S153J
R	110		RS1/16S822J
R	111		RS1/16S822J
R	112		RS1/16S153J
R	113		RS1/16S104J
R	114		RS1/16S104J
R	115		RS1/16S104J
R	116		RS1/16S104J
R	117		RS1/16S221J
R	118		RS1/16S221J
R	119		RS1/16S221J
R	120		RS1/16S221J
R	121		RS1/16S103J
R	501		RS1/8S101J
R	502		RS1/8S101J
R	601		RS1/16S473J
R	602		RS1/16S473J
R	603		RS1/16S473J
R	604		RS1/16S102J
R	605		RS1/16S222J
R	606		RS1/16S222J
R	607		RS1/16S222J
R	608		RS1/16S222J
R	609		RS1/16S222J
R	610		RS1/16S222J
R	611		RS1/16S561J
R	612		RS1/16S561J
R	613		RS1/16S561J
R	614		RS1/16S561J
R	615		RS1/16S103J
R	616		RS1/16S103J
R	617		RS1/16S163J
R	618		RS1/16S222J
R	619		RS1/16S0R0J
R	620		RS1/16S473J
R	621		RS1/16S433J
R	622		RS1/16S103J
R	640		RS1/16S471J
R	641		RS1/16S471J
R	642		RS1/16S471J
R	643		RS1/16S471J
R	644		RS1/16S471J
R	649		RS1/16S222J
R	651		RS1/16S222J
R	652		RS1/16S471J
R	653		RS1/16S471J
R	654		RS1/16S471J
R	655		RS1/16S471J
R	656		RS1/16S471J
R	657		RS1/16S471J
R	658		RS1/16S471J
R	659		RS1/16S471J
R	660		RS1/16S471J
R	661		RS1/16S102J
R	662		RS1/16S102J
R	663		RS1/16S102J
R	664		RS1/16S102J

=====Circuit Symbol and No.	===Part Name	Part No.
R 665		RS1/16S102J
R 666		RS1/16S471J
R 667		RS1/16S471J
R 668		RS1/16S331J
R 669		RS1/16S331J
R 670		RS1/16S331J
R 671		RS1/16S331J
R 672		RS1/16S331J
R 673		RS1/16S471J
R 674		RS1/16S471J
R 675		RS1/16S471J
R 676		RS1/16S471J
R 677		RS1/16S222J
R 678		RS1/16S222J
R 679		RS1/16S222J
R 680		RS1/16S154J
R 681		RS1/16S222J
R 682		RS1/16S102J
R 683		RS1/16S912J
R 685		RS1/16S102J
R 689		RS1/16S103J
R 690		RS1/16S103J
R 691		RS1/16S273J
R 692		RS1/16S202J
R 693		RS1/16S512J
R 694		RS1/16S104J
R 695		RS1/16S104J
R 696		RS1/16S104J
R 697		RS1/16S222J
R 698		RS1/16S222J
R 699		RS1/16S222J
R 701		RS1/10S204J
R 702		RS1/16S104J
R 703		RS1/16S153J
R 704		RS1/16S473J
R 705		RS1/16S683J
R 706		RS1/16S473J
R 707		RS1/16S223J
R 708		RS1/8S101J
R 709		RS1/8S101J
R 711		RS1/16S103J
R 712		RS1/8S3R9J
R 713		RS1/16S102J
R 714		RS1/16S473J
R 715		RS1/16S473J
R 716		RS1/16S473J
R 717		RS1/16S473J
R 718		RS1/16S473J
R 719		RS1/8S101J
R 721		RS1/8S103J
R 722		RS1/16S473J
R 723		RS1/16S152J
R 731		RS1/10S681J
R 732		RS1/16S223J
R 733		RS1/16S103J
R 734		RS1/16S223J
R 735		RS1/16S223J
R 736		RS1/4S2R2J
R 737		RS1/4S2R2J
R 738		RS1/16S104J
R 741		RS1/16S223J
R 742		RS1/16S223J
R 743		RS1/16S103J
R 744		RS1/16S103J
R 751		RS1/16S101J
R 752		RS1/16S473J
R 753		RS1/10S223J
R 754		RS1/16S101J
R 755		RS1/4S221J
R 756		RS1/16S681J

=====Circuit Symbol and No.	===Part Name	Part No.
R 757		RS1/16S511J
R 758		RS1/16S561J
R 759		RS1/16S103J
R 760		RS1/16S273J

CAPACITORS

C 101		CEV4R7M35
C 102		CEV4R7M35
C 103		CEV4R7M35
C 104		CEV4R7M35
C 105		CCSRCH101J50
C 106		CCSRCH101J50
C 107		CCSRCH101J50
C 108		CCSRCH101J50
C 109		CKSRYB473K16
C 110		CKSRYB473K16
C 111		CEV4R7M35
C 112		CEV4R7M35
C 113		CEV4R7M35
C 114		CEV4R7M35
C 501		CKSRYB102K50
C 502		CKSRYB102K50
C 503		CKSRYB104K16
C 601		CKSRYB104K16
C 603		CKSRYB103K50
C 605		CKSRYB103K50
C 651		CKSRYB103K50
C 701		CEAT471M16
C 702		CEAT471M16
C 703		CKSQYB104K25
C 704		CKSRYB223K25
C 705		CKSRYB103K50
C 706		CKSRYB103K50
C 707		CKSRYB103K50
C 708		CSZSC220M16
C 709		CCL1049
C 710		CKSRYB103K50
C 711		CKSRYB473K16
C 712		CKSRYB473K16
C 713		CEV100M16
C 721		CKSRYB103K50
C 731		CEV4R7M35
C 732		CKSRYB473K16
C 751		CKSRYB473K16
C 752		CKSRYB103K50
C 753		CEV220M16
C 754		CKSRYB473K16
C 755		CEV220M6R3

B Unit Number : CWM6289
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	BU2092FV
Q	903	Transistor	2SA1586
Q	904	Transistor	DTC123JU
Q	905	Chip Transistor	2SC2712
D	901	Diode	1SS355
D	902	Diode	1SS355
D	903	Diode	1SS355
D	905	LED	CL200PGCTU
D	906	LED	CL150DCD(AB)
D	907	LED	CL200PGCTU
D	908	LED	CL150DCD(AB)
D	909	LED	CL200PGCTU
D	910	LED	CL150DCD(AB)
D	911	LED	CL200PGCTU
D	912	LED	CL150DCD(AB)

=====Circuit Symbol and No.		===Part Name	Part No.
D	913	LED	CL200PGCTU
D	914	LED	CL150DCD(AB)
D	915	LED	CL200PGCTU
D	916	LED	CL150DCD(AB)
D	917	Diode	UDZ2R7(B)
D	918	Diode	UDZ2R7(B)
S	901	Switch	CSG1043
S	902	Switch	CSG1043
S	903	Switch	CSG1043
S	904	Switch	CSG1043
S	905	Switch	CSG1043
S	906	Switch	CSG1043
S	907	Switch	CSG1043
S	910	Spring Switch	CSN1033
IL	901	Lamp 60mA 8V	CEL1526
IL	902	Lamp 60mA 8V	CEL1526
IL	903	Lamp 60mA 8V	CEL1568
IL	904	Lamp 60mA 8V	CEL1568

RESISTORS

R	901		RS1/10S561J
R	902		RS1/10S561J
R	903		RS1/10S561J
R	904		RS1/10S561J
R	910		RS1/8S511J
R	911		RS1/8S511J
R	912		RS1/8S511J
R	913		RS1/8S511J
R	914		RS1/8S511J
R	915		RS1/8S511J
R	916		RS1/8S511J
R	917		RS1/8S511J
R	918		RS1/8S511J
R	919		RS1/8S511J
R	920		RS1/8S511J
R	921		RS1/8S511J
R	931		RS1/8S510J
R	932		RS1/8S510J
R	934		RS1/10S223J
R	935		RS1/10S102J
R	936		RS1/10S103J
R	937		RS1/10S362J
R	938		RS1/10S472J

CAPACITORS

C	901		CKSQYB104K50

C Unit Number : CWX2202
Unit Name : CD Core Unit(Servo Unit)

MISCELLANEOUS

IC	101	IC	UPC2572GS
IC	201	IC	UPD63702AGF
IC	301	IC	BA5986FM
Q	101	Transistor	2SD1664
Q	102	Transistor	UMD2N
D	301	Diode	1SR154-400
X	201	Ceramic Resonator 16.934MHz	CSS1457
EF	201	Filter	CCG1076

RESISTORS

R	101		RS1/8S100J
R	102		RS1/8S120J
R	104		RS1/16S822J
R	105		RS1/16S682J
R	106		RS1/16S183J
R	107		RS1/16S822J
R	108		RS1/16S333J
R	109		RS1/16S683J
R	110		RS1/16S134J
R	111		RS1/16S273J

=====Circuit Symbol and No.		===Part Name	Part No.
R	112		RS1/16S222J
R	113		RS1/16S103J
R	114		RS1/16S103J
R	115		RS1/16S102J
R	116		RS1/16S163J
R	117		RS1/16S163J
R	120		RS1/16S101J
R	121		RS1/16S101J
R	125		RS1/16S0R0J
R	201		RS1/16S104J
R	202		RS1/16S103J
R	203		RS1/16S332J
R	204		RS1/16S752J
R	205		RS1/16S752J
R	206		RS1/16S101J
R	250		RS1/16S331J
R	251		RS1/16S331J
R	252		RS1/16S331J
R	253		RS1/16S331J
R	254		RS1/16S331J
R	255		RS1/16S471J
R	256		RS1/16S471J
R	259		RS1/16S221J
R	263		RS1/16S471J
R	269		RS1/16S0R0J
R	274		RS1/16S471J
R	277		RS1/16S471J
R	301		RS1/16S103J
R	302		RS1/16S153J
R	303		RS1/16S103J
R	304		RS1/16S273J
R	305		RS1/16S103J
R	306		RS1/16S752J
R	307		RS1/16S103J
R	308		RS1/16S103J
R	309		RS1/16S471J
R	311		RS1/16S471J

CAPACITORS

C	101		CEV101M6R3
C	102		CKSQYB104K16
C	103		CEV470M6R3
C	104		CKSQYB334K16
C	105		CCSRCH240J50
C	106		CKSRYB222K50
C	107		CEV4R7M35
C	108		CKSRYB273K25
C	109		CCSRCH101J50
C	110		CKSQYB104K16
C	111		CKSRYB332K50
C	112		CKSQYB473K16
C	113		CKSRYB103K25
C	114		CKSRYB391K50
C	115		CCSRCH121J50
C	116		CKSRYB682K50
C	117		CKSRYB333K16
C	118		CKSQYB334K16
C	119		CKSQYB334K16
C	120		CKSQYB334K16
C	121		CKSQYB334K16
C	122		CKSQYB104K16
C	123		CKSRYB472K50
C	124		CKSQYB104K16
C	125		CCSRCH5R0C50
C	126		CKSRYB153K25
C	127		CKSRYB102K50
C	201		CKSQYB334K16
C	202		CKSQYB104K16
C	203		CKSQYB104K16

=====Circuit Symbol and No.	===	Part Name	Part No.
C	204		CKSRYB471K50
C	207		CKSQYB683K16
C	208		CKSRYB821K50
C	209		CKSRYB273K25
C	210		CKSQYB334K16
C	211		CKSQYB334K16
C	212		CKSQYB334K16
C	213	22µF/6.3V	CCH1300
C	301		CEV101M10
C	302		CEV101M10

D Unit Number : CWX2203
Unit Name : CD Core Unit(STS Unit)

MISCELLANEOUS

IC	501	IC	CXD2511R
IC	502	IC	MSM514400DP-60TS
IC	601	IC	AK4321VF
IC	701	IC	BA05SFP
IC	801	IC	LB1836M
IC	802	IC	LB1836M
Q	801	Transistor	DTA123JK
Q	802	Transistor	UN2211
D	701	Diode	1SR154-400
D	702	Diode	1SR154-400
D	703	Diode	1SS355
D	704	Diode	1SS355
D	705	Diode	1SS355
D	706	Diode	1SS355
D	707	Diode	1SS355
D	708	Diode	1SS355
S	801	Spring Switch(LOAD)	CSN1052
S	802	Spring Switch(DOOR)	CSN1052
S	803	Spring Switch(MODE)	CSN1052
EF	701	Filter	CCG1051
EF	702	Filter	CCG1051

RESISTORS

R	501		RS1/16S102J
R	502		RS1/16S202J
R	503		RS1/16S392J
R	504		RS1/16S822J
R	505		RS1/16S163J
R	506		RS1/16S512J
R	507		RS1/16S182J
R	508		RS1/16S222J
R	509		RS1/16S102J
R	510		RS1/16S102J
R	511		RS1/16S102J
R	512		RS1/16S102J
R	513		RS1/16S102J
R	514		RS1/16S471J
R	601		RS1/16S101J
R	602		RS1/16S101J
R	603		RS1/16S471J
R	604		RS1/16S471J
R	701		RS1/10S0R0J
R	702		RS1/10S100J
R	716		RS1/16S471J
R	717		RS1/16S471J
R	718		RS1/16S471J
R	801		RS1/10S102J

CAPACITORS

C	501		CKSQYB334K16
C	502		CKSQYB334K16
C	503		CKSQYB334K16
C	504		CCSRCH471J50
C	506		CCSRCH221J50

=====Circuit Symbol and No.	===	Part Name	Part No.
C	601		CKSQYB334K16
C	602		CCSRCH221J50
C	603		CKSQYB334K16
C	604		CKSQYB334K16
C	605	22µF/6.3V	CCH1300
C	606		CKSQYB334K16
C	701	22µF/6.3V	CCH1300
C	702		CEVL101M6R3
C	703		CKSQYB334K16
C	704		CKSQYB334K16
C	801		CKSQYB104K25
C	802		CKSQYB104K25
C	803		CEVL220M16

E Unit Number :
Unit Name : Motor PCB(B)

M	4	Motor Unit(Carriage)	CXB3178
M	5	Motor(Spindle)	CXM1120

F Unit Number :
Unit Name : Motor PCB(A)

Q	1	Photo-interrupter	RPI-221
M	1	Motor Unit(Cam Gear)	CXB3174
M	3	Motor Unit(ELV)	CXB3175

G Unit Number :
Unit Name : PCB Unit(D)

Q	851	Photo-transistor	CPT230SCTD(CD)
Q	852	Photo-transistor	CPT230SCTD(CD)

H Unit Number :
Unit Name : PCB Unit(B)

S	886	Spring Switch(ELV Home)	CSN1052
S	887	Spring Switch(Clamp)	CSN1051

I Unit Number :
Unit Name : PCB Unit(E)

R	856		RS1/8S911J
R	857		RS1/8S821J

J Unit Number :
Unit Name : PCB Unit(C)

Q	881	Photo-transistor	CPT230SCTD(CD)
D	883	Chip LED	CL202IRXTU
S	885	Spring Switch(MAX)	CSN1052

K Unit Number :
Unit Name : Load Motor PCB

M	2	Motor Unit(Load)	CXB3177

L Unit Number :
Unit Name : PCB Unit(A)

D	891	Chip LED	CL202IRXTU
D	892	Chip LED	CL202IRXTU

Miscellaneous Parts List

		Pickup Unit(Service)(P8)	CXX1311

6. ADJUSTMENT

CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

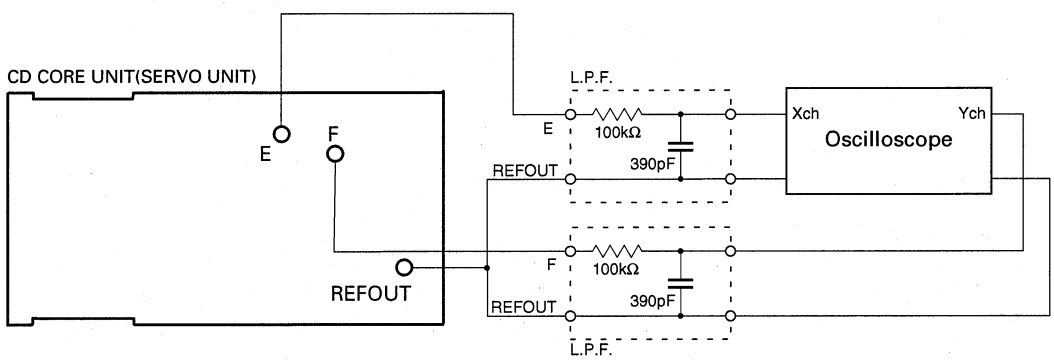
• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFOUT
• Disc	• ABEX TCD-784
• Mode	• TEST MODE



• **Checking Procedure**

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the TRK+ and TRK- buttons, move the PU unit to the innermost track.
3. Press key **3** to close focus, the display should read "91". Press key **2** to implement the tracking balance adjustment the display should now read "81". Press key **3** 4 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

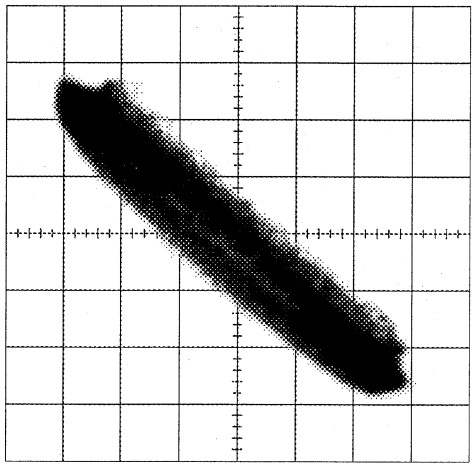
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

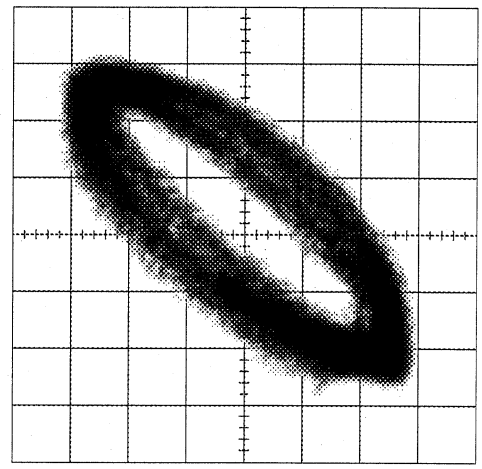
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

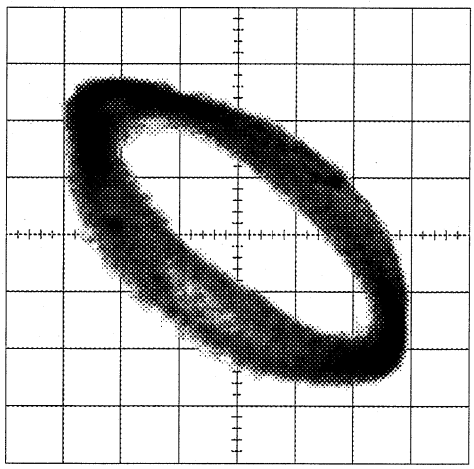
0°



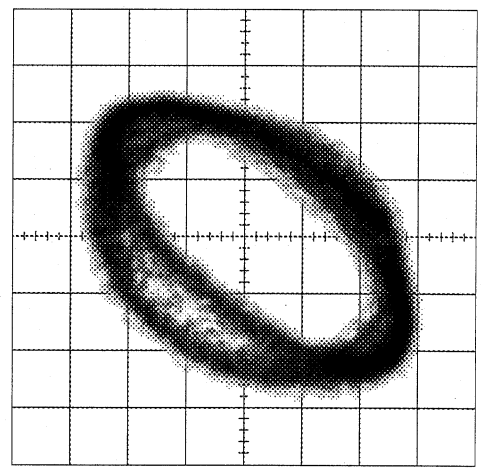
30°



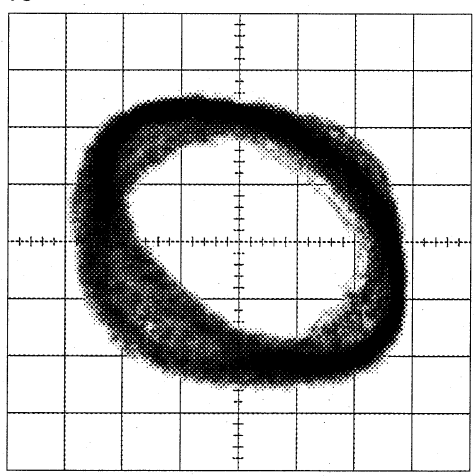
45°



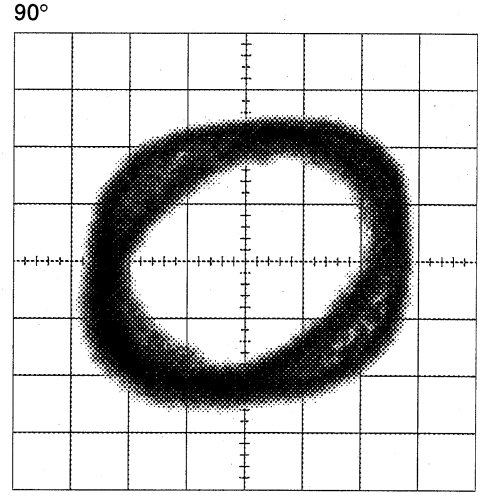
60°



75°



90°



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

● CD Test Mode

1) Precautions on Adjustment

- The unit employs a single voltage (+5V) for the regulator, thus the reference potential of the signal is RFOUT (approximately 2.5V) rather than GND. Inadvertent contact of REFOUT and GND during adjustment can result not only in disabling normal potential measurement but also in exposing the pick-up to strong impacts due to malfunctioning of the servo. Therefore, you are requested to observe the following precautions.
- Make sure that the negative probe of the measuring instrument is not connected to RFOUT or GND. Special care must be exercised so that the channel 1 negative probe may not be connected to the oscilloscope and the channel 2 negative probe to GND. Since the frame of the measuring instrument is usually at the same potential as the negative probe, the frame of the measuring instrument must be changed to floating status.
  When RFOUT is inadvertently connected to GND, you must immediately turn off the regulator or power supply.
- The regulator must be turned off before mounting or dismounting filters or wiring materials.
- You should not start adjustment or measurement immediately after the regulator is turned on. It is recommended to run the player for approximately one minute so that it may stabilize.
- When the test mode is turned on, various protective functions from the software become unavailable. Thus, you must make sure that undesirable electric or mechanical shocks are not be given to the system.
- This model employs a photo-transistor for detecting discs at their loading or ejection. Thus, if its outer case is removed during repair work and internal parts are exposed to light of strong intensity, malfunctions including the following can result:
  * The eject button becomes inoperable during play. Pressing the eject button does not eject a disc and play is continued.
  * Loading becomes unavailable.

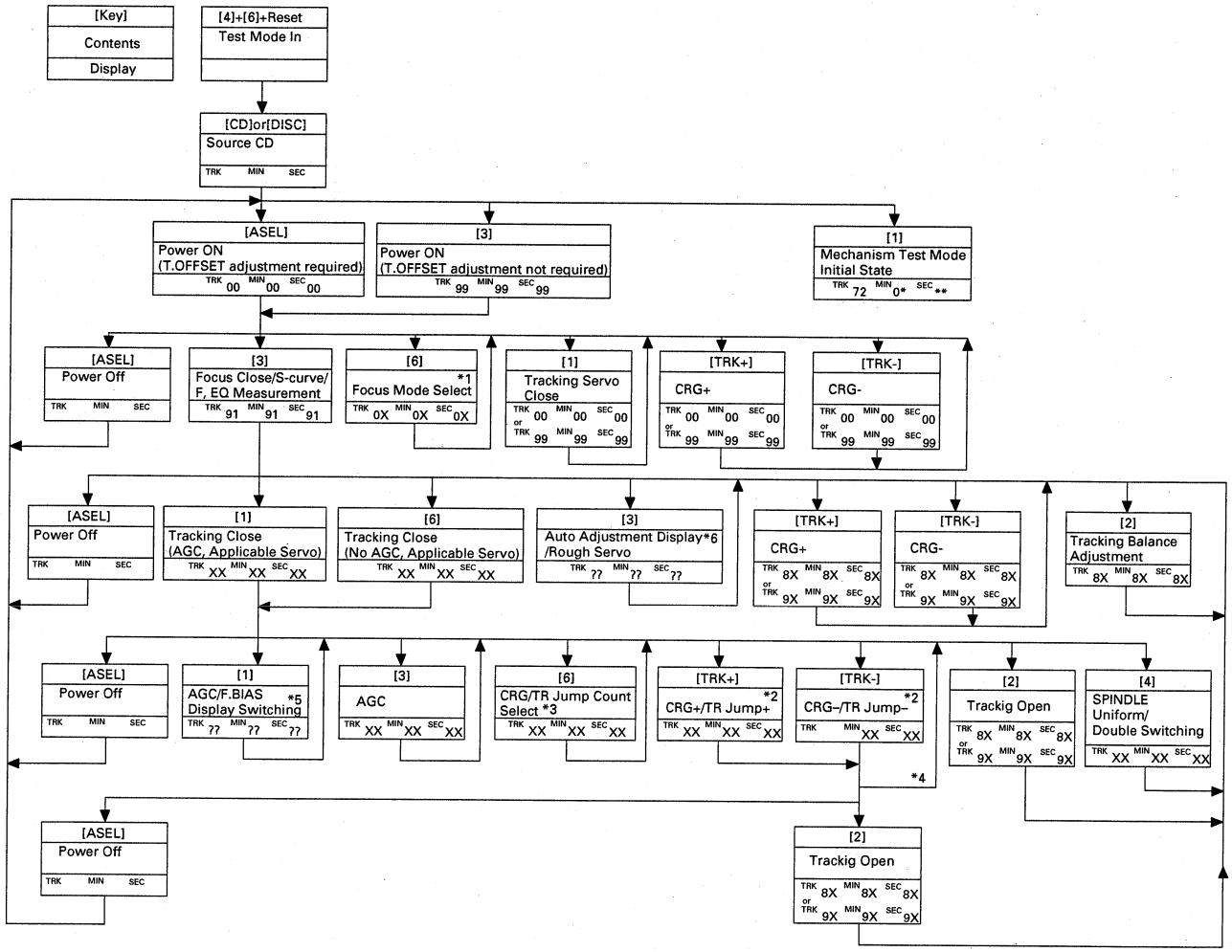
  If a malfunction is recognized, appropriate remedial actions must be taken. Such actions include changing the light source position, changing the unit position and applying a cover to the photo-transistor.
- When you press the [EJECT] key to eject a disc, you must not touch any other key until the ejection is complete.
- If you press the [TRK+] or [TRK-] for the focus search in the test mode, you must turn the power off immediately. (Otherwise, the lens will be forced to stick to the top or bottom, potentially resulting in the burning of the actuator.)

2) Description of the Test Mode

Adjustment of this unit is done in parallel with the CD control unit (DEH-M7126ZH or a head unit conforming to the GA-NET BUS specifications), thus key operations for adjustments are done from the unit. Taking the example of the DEH-M7126ZH, the following describes how to turn on the test mode and operate the keys. The keys referred to in the following are those used on the DEH-M7126ZH.

- Turning on the Test Mode
  Press the [4] and [6] keys simultaneously to turn on the ACC and the backup.
- Ending the Test Mode
  When ACC or Back up is off, the test mode is canceled.
- Operation of TR JUMPs (except 100TR) continues after your finger has left the key. CRG MOVE and 100TR JUMP are forced to the tracking close mode as soon as the key is released.
- Turning the power on or off resets the JUMP MODE to the Single TR.

● CD Player Flowchart



*1) Switching must take place in the following sequence.

Focus Close → S.Curve Check → Focus EQ Measurement.

*2) Single TR /4TR / 10TR / 32TR / 100TR

*3) Switching must take place in the following sequence.

Single TR → 4 TR → 10 TR → 32 TR → 100 TR → CRG Move
9X(8X):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*4) It applies to the CRG Move and 100TR Jump alone.

*5) Switching must take place in the following sequence.

Min/Sec (or Track No.) → F.AGC Gain → F.AGC Gain → F. BIAS Setting

(AGC Gain = (Current value/Initial value) x 20)

*6) Switching must take place in the following sequence.

F.Cancel Display → T.Offset Display → T.Bal Display → Rough Servo.

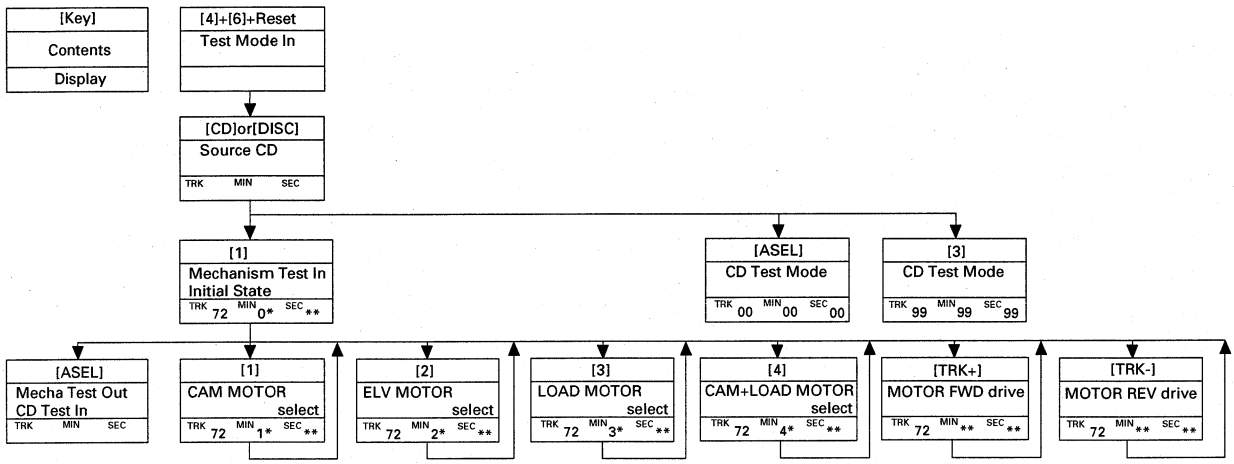
(F.Bias value, F.Cancel value, T.Offset value, T.Bal value
= (Upper 8 bits of the setting (7F[H] to 80[H] + 128)/4
= 63[D] to 32[D] to 00[D]).

[Key]	Operation
[ASEL]	Power ON/OFF
[TRK+]	CRG+/TR Jump+ (Toward outer perimeter)
[TRK-]	CRG-/TR Jump- (Toward inner perimeter)
[1]	Tracking Close/AGC gain, F.Bias adjustment value display switching
[2]	Auto Tracking Balance adjustment/ Tracking Open
[3]	Focus Close, S.Curve, F.EQ measurement/ Rough Servo/AGC
[4]	Focus Open /SpindleUniform/Double Switching
[5]	Jump Off
[6]	Focus Mode select/Tracking Close/ CRG,TR Jump Switching

- Operation of TR JUMPs other than 100TR is continued after your finger has left the key. CRG Move and 100TR Jump are forced to the Tracking Close Mode when the key is released.
- Powering on or off resets the Jump Mode to the Single TR (91).
- When ACC or Back up is off, the test mode is canceled.

Note: The GA-NET BUS head unit(made by Pioneer) must be employed for controlling the test mode.
Note: Sound is unavailable even after the tracking has been closed
(this trouble results when the IC for the STS is not controlled in the test mode).
Note: When you pressed the [TRK+] or [TRK-] key during the Focus Search, you must turn the power off immediately
(otherwise, the lens can stick resulting in actuator damages).
Note: To exchange CD's, insert or eject a CD, use numerical buttons 1 to 6 on the CD changer.
(During the test mode, even when no disc is stored on a tray. If so, first press the EJECT button once.)

● CD Changer Mechanism Flowchart



<Screen Display during Mecha Test Mode>

TRK : 72

MIN : Upper (10th order):
Type of motors selected

1* : CAM motor
2* : ELV motor
3* : LOAD motor
4* : CAM+LOAD motor

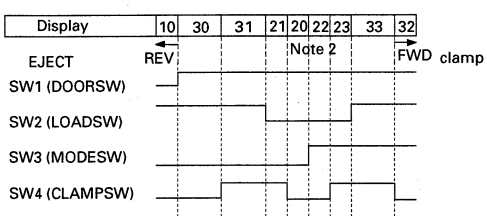
Lower (order of 1): State of DISC sensing phototransistor and switch

PH1	PH2	MAXSW	Display
L	L	L	*0
H	L	L	*1
L	H	L	*2
H	H	L	*3
L	L	H	*4
H	L	H	*5
L	H	H	*6
H	H	H	*7

L: Phototransistor is OPEN and switch is ON.
H: Phototransistor is CLOSE and switch is OFF.

[Key]	Operation
[ASEL]	Mechanism Test is initialized.
[TRK+]	Valid only when the motor selected (using the [1] to [3] ,[6] keys) is driven in FWD direction.
[TRK-]	Valid only when the motor selected (using the [1] to [3] ,[6] keys) is driven in REV direction.
[1]	CAM MOTOR is selected.
[2]	ELV MOTOR is selected.
[3]	LOAD MOTOR is selected.
[4]	CAM + LOAD MOTOR is selected.

SEC : ① When ELV motor is selected, ELV position is displayed
01: ELV at home position (1st disc).
10: ELV at a position other than home (2nd to 6th).
11: ELV moving to a specified position. * Note 1
00: Reserved (for an error)
② When CAM.LOAD motor is selected:
Indicates CAMSW (CAM gear) status.



● Operating Procedures:
1) Turn on the CD Test Mode, then select the CD-CHANGER for the SOURCE.
2) Select the motor to be driven using the [1] to [3] ,[6] keys. (TRK 72 MIN X* SEC **)
3) Press the [TRK+] or [TRK-] in this state to drive the selected motor.

● Precautions

* While the CD mechanism is moving to exchange CDs, eject or insert a CD, never perform key operations for motor selection or drive operation.
* When driving the CAM MOTOR in 31 → 30 → 10 (in REV direction), the elevation position must be at the EJECT/LOAD position (the top position).

Note 1: When the elevation is situated at the Note 1 position, move of any motor other than the REV is disabled.

Note 2: Before performing the elevation, make sure that the CAM SW (switch) is set to a position between 22 and 20.
As a rule, driving of the ELV MOTOR must be started immediately after the CAMSW indication has changed from 22 to 20.

● Operating Procedures for Ejecting a Clamped Disc

① Select CAM MOTOR using [1], then press the REV direction while the disc is being clamped (CAMSW state is 32).
The CAMSW status indication sequentially changes through 32→33→23→22.
② When the disc to be ejected is not identical with the disc being clamped, select the [2] ELV MOTOR in the vicinity of where the display changes from 22 to 20, then match the elevation to the disc to be ejected according to the following procedures:
After selecting ELV MOTOR, lower the elevation until the ELV position display becomes 01 (1st disc) using the REV direction.
Drive the elevation up until the display is changed to 10. This is the elevation where the second disk is situated.
The next display of 10 tells you the elevation of the 3rd disc. Repeating this operation allows you to establish an elevation matching each disc. (When the elevation is driven from the 1st through 6th disc, the status display changes as 01→11→10→11→10→11→10→11→10→11→10.)
(When the disc to be ejected coincides with the disc being clamped, the above operations are not necessary.)
③ Select the [1] CAM MOTOR and then, using the REV direction, drive it until the display changes from 20 (or 22) to 21 and 31.
④ Select the [2] ELV MOTOR, then drive the tray of the disc to be ejected up to the EJECT/LOAD position (using the FWD direction).
⑤ Select the [4] CAM+LOAD MOTOR, then drive it in the REV direction until the display changes from 31 to 30 and 10.
The door will open immediately before the display changes to 10 and part of the disc will be pushed out.
⑥ When 10 is displayed, select the [3] LOAD MOTOR, then drive it in REV direction until the disc is completely ejected.

7.1.2 DISASSEMBLY

● Removing the upper case (not shown)

1. Remove the five screws, then remove the upper case.

● Removing the Extension Unit (Fig. 1)

1. Remove the three screws B, then remove the side frame and holder.
2. Remove the screw C, screw D and PCB from the connector.
3. Straighten the three currently bent claws, then remove the extension unit.

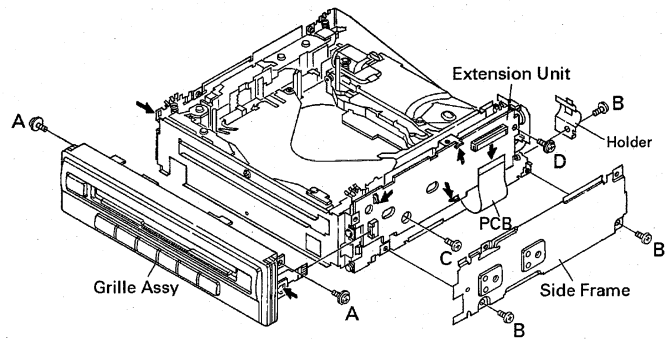


Fig. 1

● Removing the Grille Assy (Fig. 1)

1. Remove the two screws A and the connector, then remove the grille assy.

● Removing the CD Mechanism Module (Fig. 2)

1. Remove the three screws A, then remove the front frame.
2. Remove the three screws B and two screws C, then remove the damper and holder.
3. Remove the two spring Ⓐs, spring Ⓑ and spring Ⓒ from the hook, then remove the CD mechanism module.

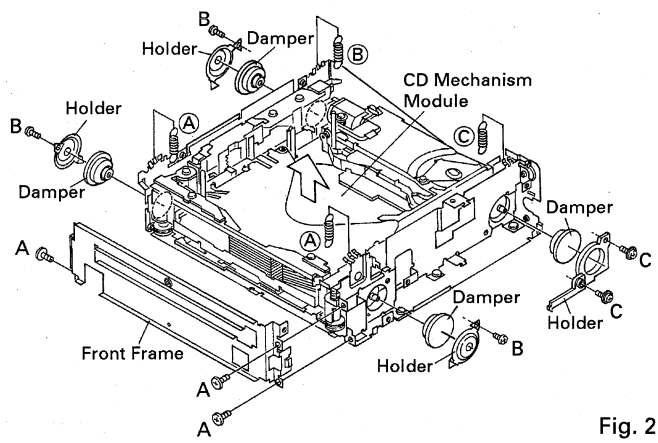


Fig. 2

– Precautions on Assembly –

Apply spring Ⓒ (black) to the front side hook.

Remaining springs Ⓐ and Ⓑ are to be hung on the center hook.

● Removing the Keyboard Unit (Fig. 3)

1. Remove the screws A and four screws B, then remove the keyboard unit.
2. Remove the four screws C, then remove the guide.

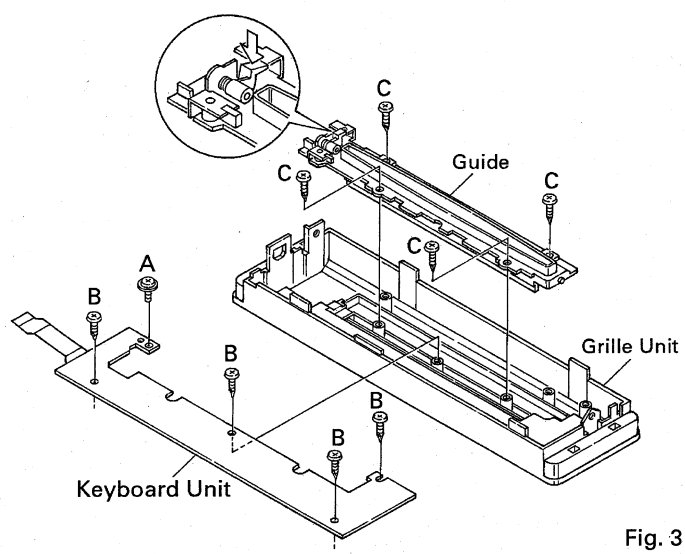


Fig. 3

● How to remove the Tray Assy

1. Apply about 6V current to the Cam gear motor until all holes match at the position (A) (elevation OK position).
2. Hook the three springs B temporarily as shown in Fig. 5. While pushing the Tray holder lock arms (right and left) in the direction (C), remove the Tray holder.
3. Lift up the Tray assy to remove it.

* Be careful not to remove the Tray hooks from the Tray assy.

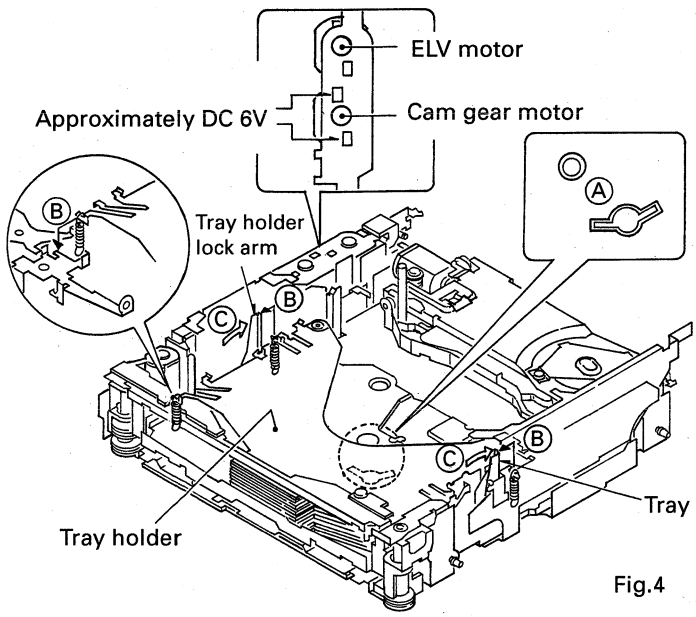


Fig.4

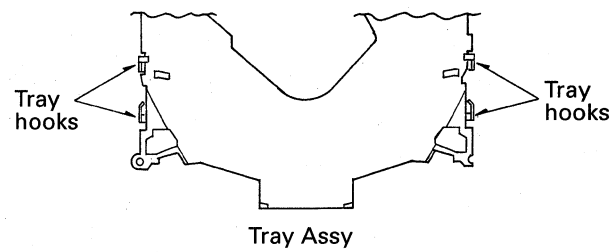


Fig. 5

● How to remove the Carriage Mech Assy

1. Insert a short pin into the flexible PCB of the Pickup unit.
2. While opening the resin hooks, remove the cover from the Servo unit.
3. Disconnect the flexible PCBs from the connectors CN101 and CN301.
4. Remove the Tray holder and the Tray assy. (See above)
5. Rotate the Cam gear motor until the positions of all holes (E) match, then stop the motor.
   (The Carriage Mech assy will stop as shown in the Fig.7.)

* When the positions of all holes match, they will be completely covered by the Carriage mech assy.

* To rotate the Cam Gear motor, see "How to remove the Tray assy".

6. Unhook the spring A.
7. Remove the flexible holder B (while opening the hooks).
8. Remove the flexible PCB (C) from the motor. (The flexible PCB (C) has been stuck on the motor with double-sided adhesive tape.)
9. Loosen the fixing screw and remove the flexible holder.

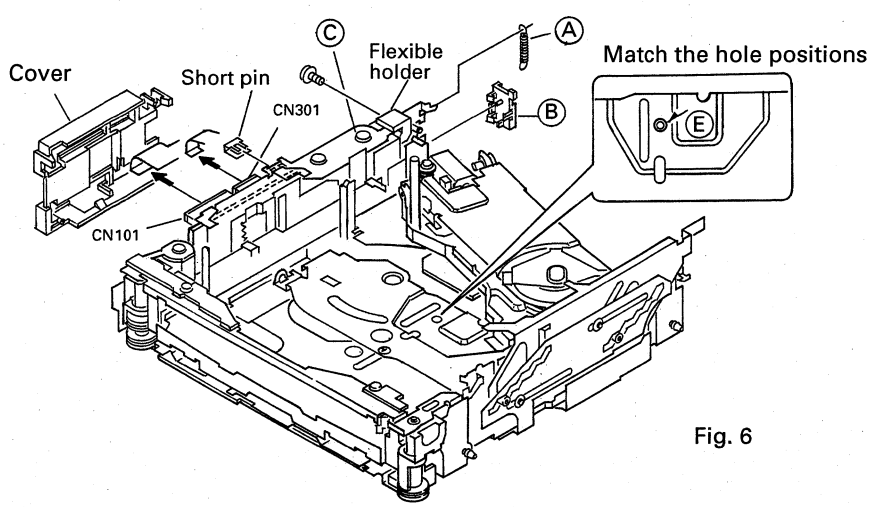


Fig. 6

10. Remove the screw, pressure spring and collar. Lift up the Carriage mechanism assy to remove it.
    * Screw tightening torque: 2.6kgfcm

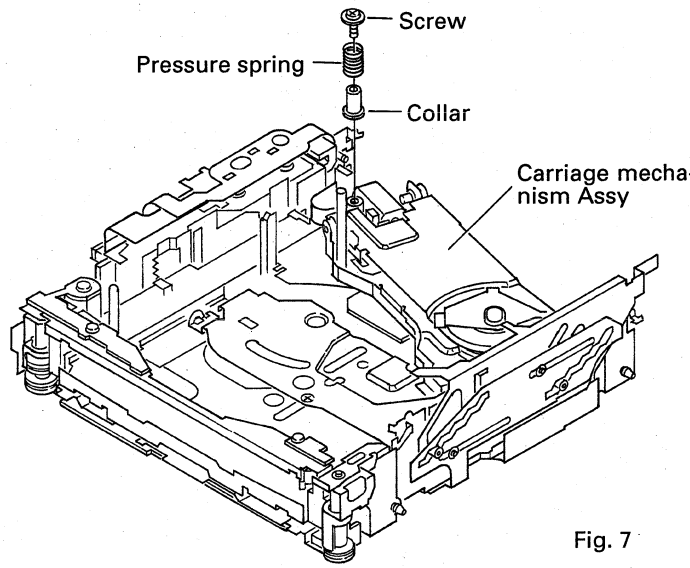


Fig. 7

● How to remove the Pickup unit

1. Remove the pulling spring, torsion spring and E-shaped ring. Then remove the Clamper arm.

* The spring (A) will be removed with the Clamper arm.

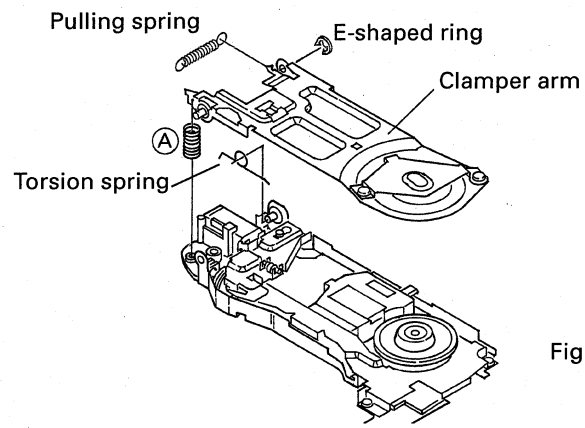


Fig. 8

2. Slide the Clamp UP lever (B) to remove it.
3. Loosen the 2 screws. Remove the feed-screw cover by sliding it.
4. Remove the feed-screw pressure spring (D).
5. Loosen the 2 screws. Remove the feed-screw holder (E).
6. Remove the belt.
7. Remove the Pickup unit together with the feed screw.

* Be careful not to lose the shaft holders at the both ends of the feed screw.
* Be careful not to damage the 2 flexible PCBs(for the Pickup and motor) when separating them. The flexible PCBs have been stuck each other with double-sided adhesive tape.

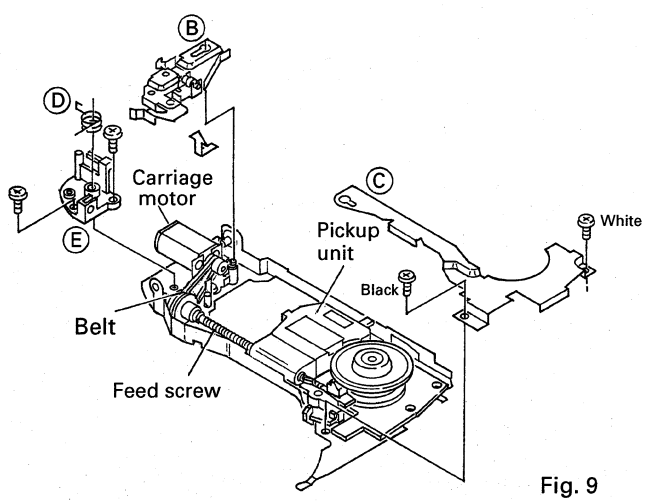


Fig. 9

8. Loosen the 2 screws. Remove the plate spring and the rack.
9. Pull out the feed screw from the Pickup unit.

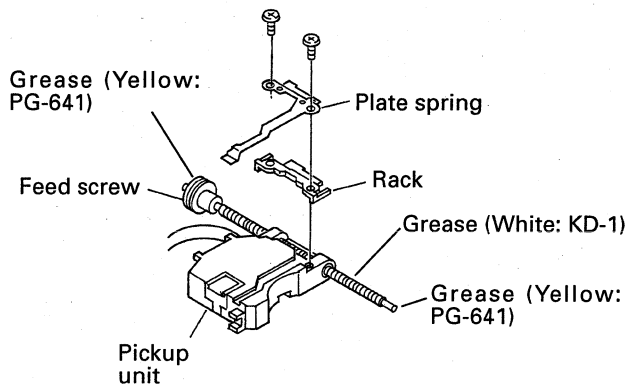
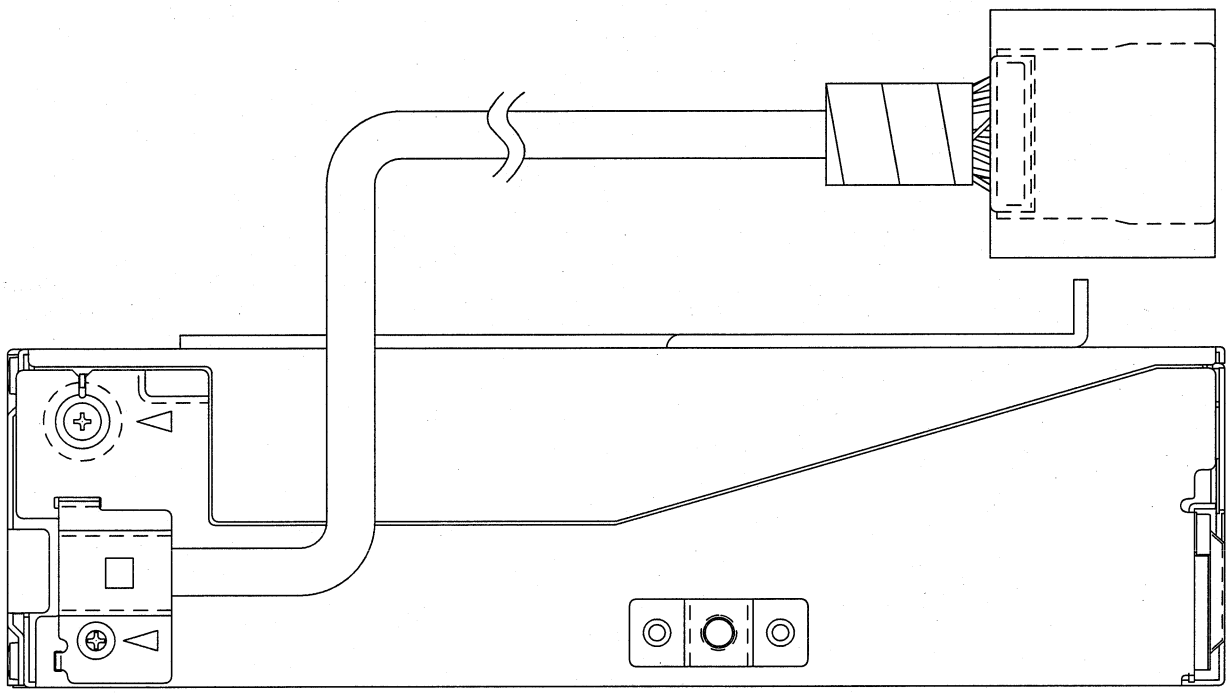
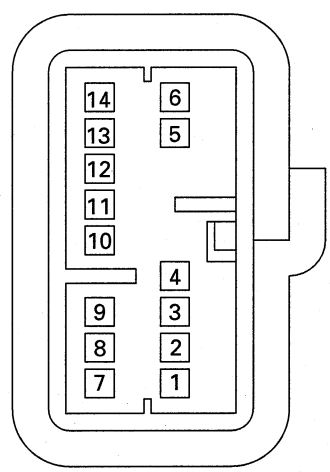


Fig. 10

7.1.3 CONNECTOR FUNCTION DESCRIPTION





1	Lch+
2	Rch+
3	AGND
4	GND
5	SWDACC
6	B.UP
7	Lch-
8	Rch-
9	NC
10	BUS GND
11	BUS-
12	BUS+
13	ILL
14	NC

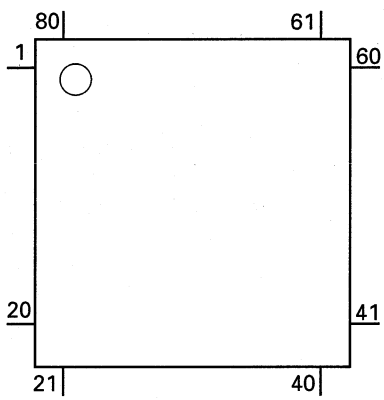
7.2 IC

● **Pin Functions (PD5540A)**

Pin No.	Pin Name	I/O	Function and Operation
1	VDIN	I	VD power supply sensor input
2	DOORSW	I	Door open position sense input
3	NHIN	I	NH-BUS dada input
4	NHOUT	O	NH-BUS dada output
5	CLAMPSW	I	Disk clamp sense input
6	ELHOME	I	Elevation sense input
7	XSCK	O	LSI clock output
8	XSO	O	LSI data output
9	XSI	I	LSI data input
10	$\overline{\text{XSTB}}$	O	LSI strobe output
11	$\overline{\text{XRST}}$	O	LSI reset output
12	XA0	O	LSI data discernment control signal output
13	VDCONT	O	VD power supply control output
14	EJECTKEY	I	Eject key input
15	$\overline{\text{ASENS}}$	I	ACC power sense input
16	NHPOW	O	NH-BUS dada output
17	LOADSW	I	Loading sense input
18	ELVSW	I	Elevation OK input
19–21	TEST1-3		Not used
22	$\overline{\text{BSENS}}$	I	Back up power sense input
23	$\overline{\text{SBSY}}$	I	Signal indicating head of subcode block input
24	$\overline{\text{ISENS}}$	I	Illumination sense input
25	$\overline{\text{RESET}}$	I	Reset input
26	POWER	O	+5V power supply control output
27	CONT	O	Servo driver power supply control output
28	XIN	I	Crystal oscillating element connection pin
29	XOUT	O	Crystal oscillating element connection pin
30	VSS		GND
31–33	KST1-3	O	Key strobe output
34,35	$\overline{\text{KD1,2}}$	I	Key data input
36,37	ILL1,2	O	Illumination output
38	ASCON	O	Analog switch control output
39	$\overline{\text{TESTIN}}$	I	Test program mode input
40	DCLOSE	I	Door close sense input
41	WDSL	O	Data comparison designation output
42	XWIH	I	DRAM data white inhibit input
43	XEMP	I	DRAM data read inhibit input
44	CHDT	I	Data comparison mode monitor input
45,46	CHM0,1	O	Data comparison mode output
47-49	NC		Not used
50	XWRE	O	DRAM data white enable output L:enable
51	XRDE	O	DRAM data read enable output L:enable
52	XQOK	O	SUB-Q OK output L:SUBQ OK
53	EMPH	O	DAC EMPH output
54	SCONT	O	Double speed select output
55	LOAD	O	LED power supply control output
56	$\overline{\text{CDMUTE}}$	O	Mute output
57,58	LO2,1	O	Load motor control output
59,60	ELV2,1	O	ELV motor control output
61,62	CG2,1	O	CAM motor control output
63	MIRR	I	Mirror detector input
64	LOCK	I	Spindle lock detector input
65	FOK	I	FOK signal input
66	EXSCK	O	Shift clock output
67	EXMODE	O	Latch clock output
68	EXSO	O	Serial data output

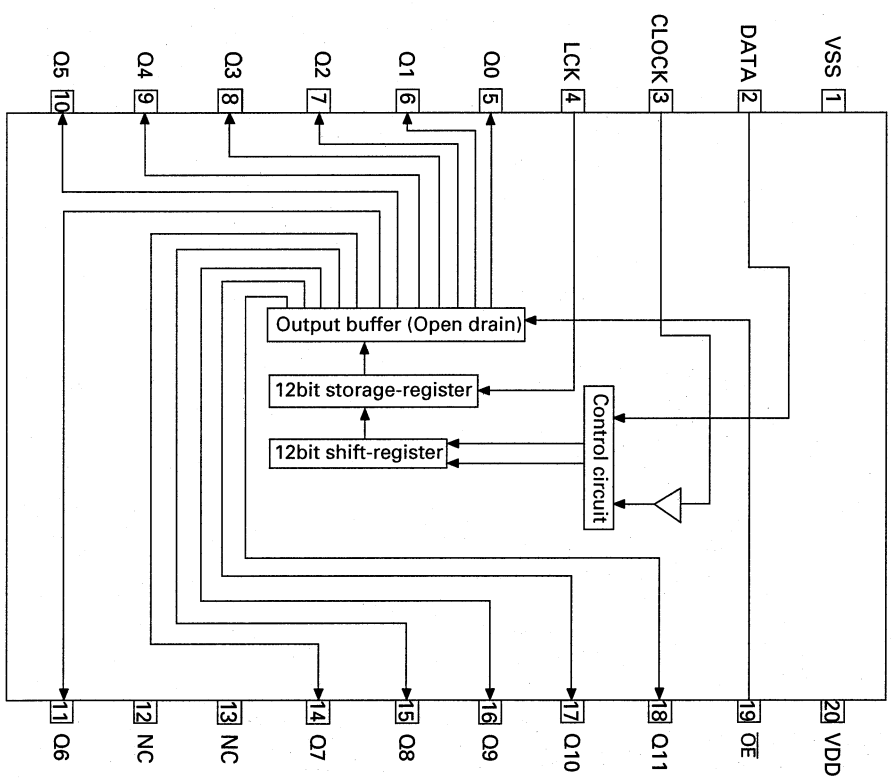
Pin No.	Pin Name	I/O	Function and Operation
69	EXCE	O	Chip enable output
70	ILPOW	O	Illumination power supply control output
71	VCC		Power supply terminal
72	VREF	I	A/D converter reference voltage input
73	AVSS	I	A/D converter GND
74	ADRMON	I	DRAM memory remaining monitor input
75	EREF	I	DRAM A/D converter reference voltage input
76-78	PH1-3	I	Disc photo sense input
79	ELVSNS	I	ELV position sense input
80	TEMP	I	Temperature detector input

*PD5540A

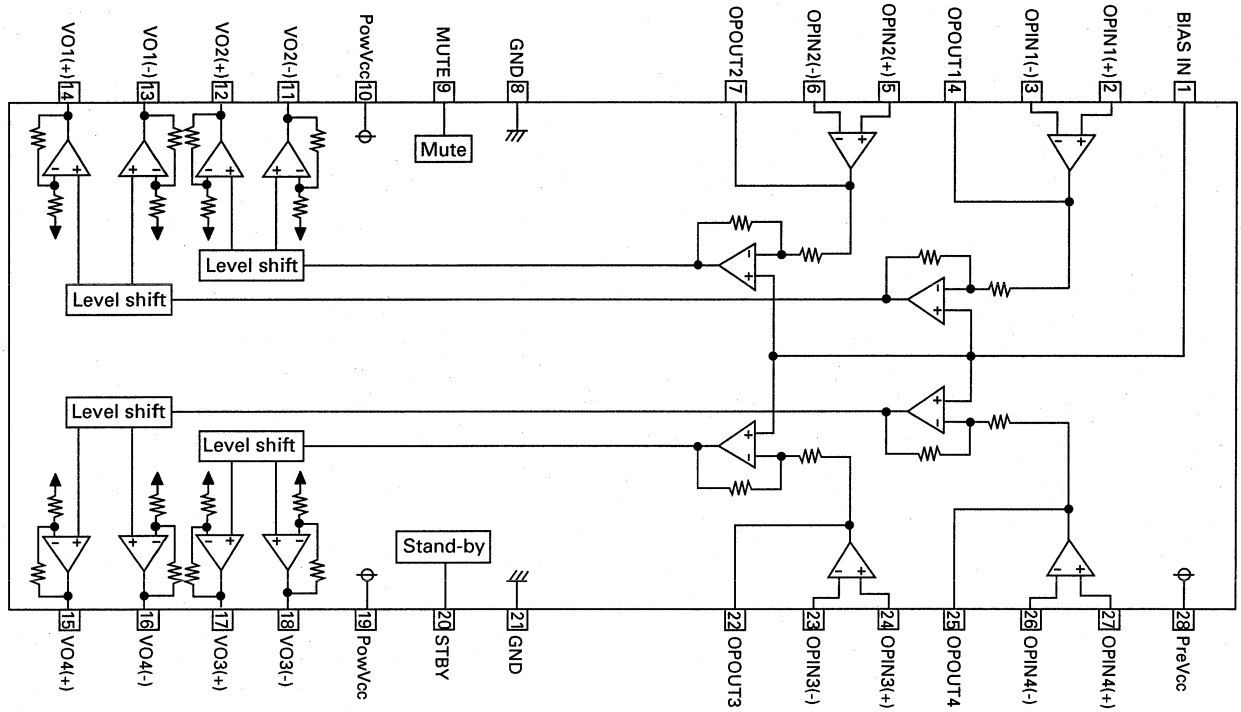


IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

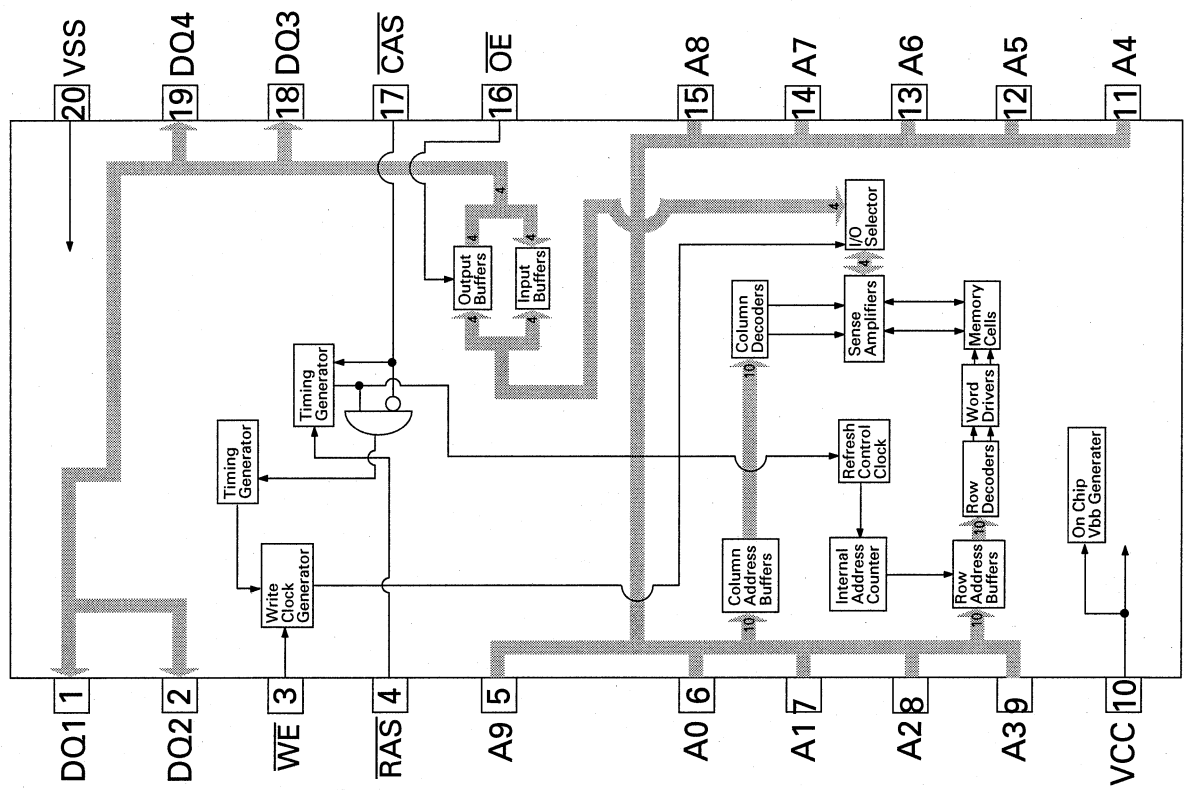
BU2092FV



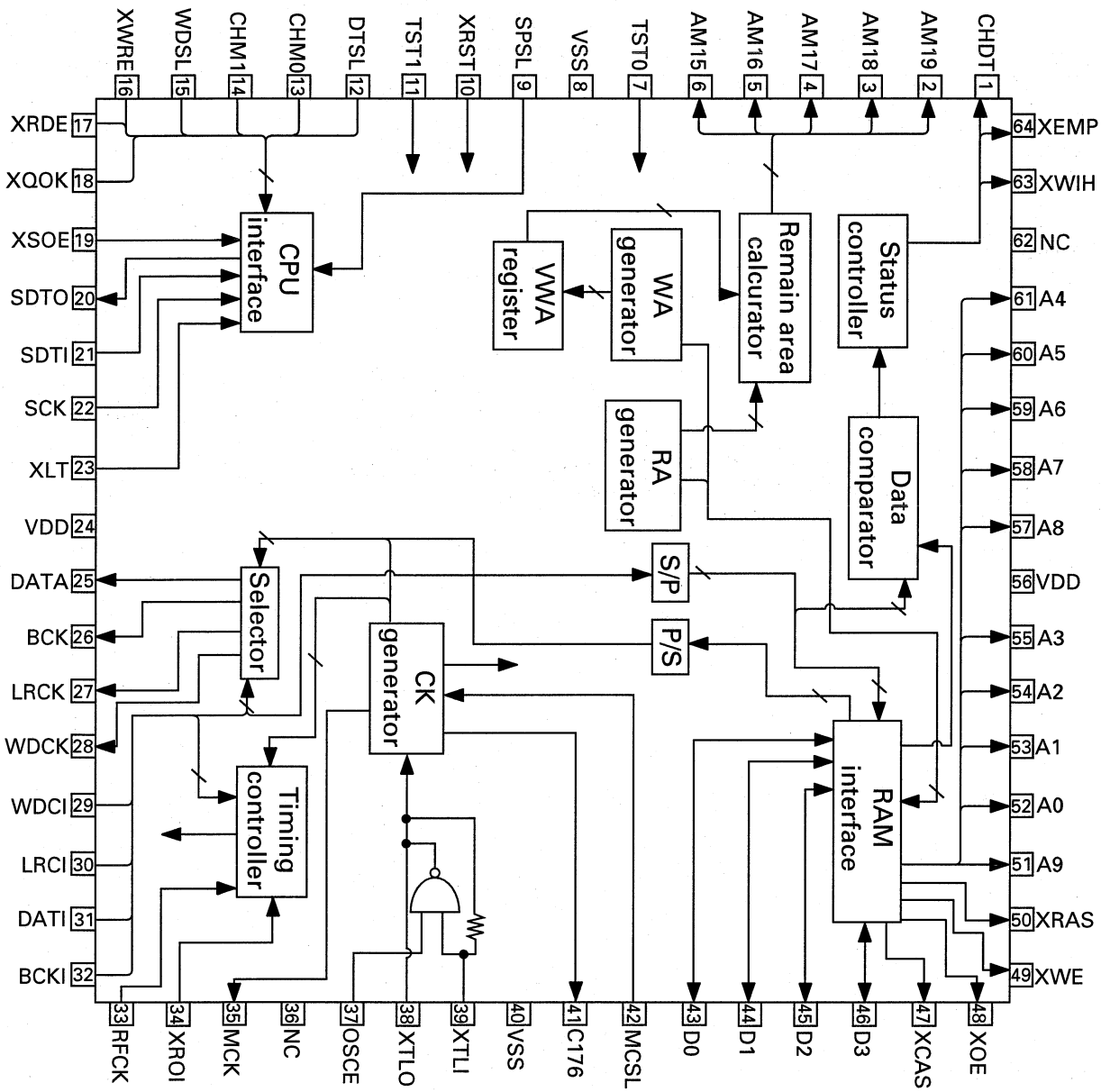
BA5986FM



MSM514400DP-60TS



CXD2511R


XWRE 16
WDSL 15
CHM1 14
CHM0 13
DTSL 12
TST1 11
XRST 10
SPSL 9
VSS 8
TST0 7
AM15 6
AM16 5
AM17 4
AM18 3
AM19 2
CHDT 1
XRDE 17
XQOK 18
XSOE 19
SDTO 20
SDTI 21
SCK 22
XLT 23
VDD 24
DATA 25
BCK 26
LRCK 27
WDCK 28
WDCI 29
LRCI 30
DATI 31
BCKI 32
64 XEMP
63 XWIH
62 NC
61 A4
60 A5
59 A6
58 A7
57 A8
56 VDD
55 A3
54 A2
53 A1
52 A0
51 A9
50 XRAS
49 XWE
48 XOE
CPU interface
VWA register
WA generator
Remain area calcurator
Status controller
RA generator
Data comparator
S/P
P/S
Selector
CK generator
Timing controller
RAM interface
33 RFCK
34 XROI
35 MCK
36 NC
37 OSCE
38 XTLO
39 XTLI
40 VSS
41 C176
42 MCSL
43 D0
44 D1
45 D2
46 D3
47 XCAS

8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS

EXPLANATION OF THE HAND MARKS

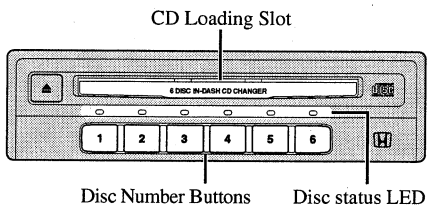
Press momentarily.

3SEC

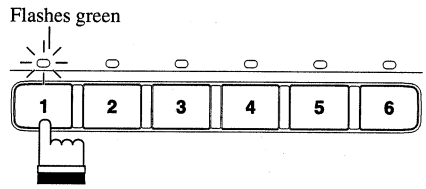
Press and hold for at least 3 seconds.

LOADING THE CD (1 of 2)

The CD Changer operates with the same controls used for the audio system. For operation, refer to the audio system section of the Owner's Manual for your radio.

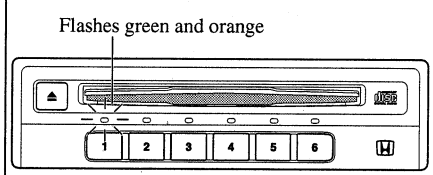


1



Press one of the buttons (1–6) to select the desired disc number for the CD you want to load.

- LED flashes green.

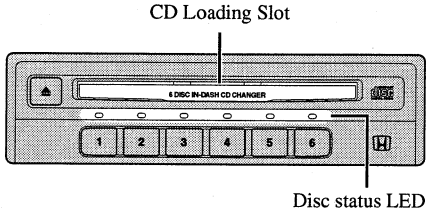


After a few seconds the CD loading slot door opens, and the LED flashes green and orange. (Green → Orange → Green → Orange)

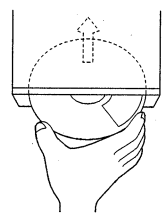
- If you do not load a CD within about 15 seconds, the door will close. Pressing the same disc number button again or pressing the eject button will cause the door to close.

LOADING THE CD (con't)

You can load a CD under a selected disc number. The system will automatically playback when the CD is loaded.



2



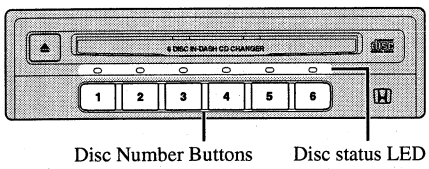
Insert the CD with the label side up.

- When loading is complete, LED will stop flashing and remain lit.

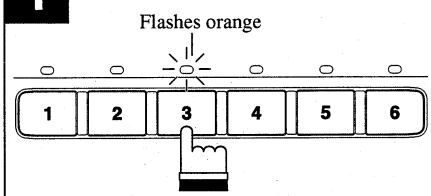
Note: This unit is not designed to handle 8 cm CD's.
Do not attempt to load it alone or with adapter. It may cause the unit to malfunction.

Notes:
- Repeat steps **1** and **2** to load CDs in other disc numbers.
- The unit may go into CD eject mode when it detects improper CD loading. Wait 2 seconds before inserting the CD for loading.

SELECTING A CD



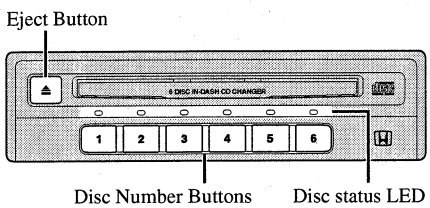
1



Press one of the buttons (1–6) to select a desired CD for play.

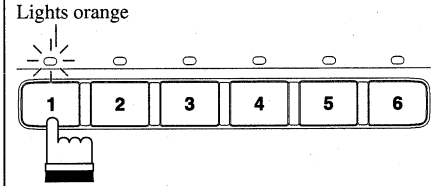
- Green LED indicates CDs are stored and orange LED indicates currently selected CD.
- While CDs are being changed, the LED flashes orange until CD changing has been completed, then it lights orange.
- You can also select a desired CD by using preset buttons or upward button on the radio.

EJECTING THE CD (1 of 2)



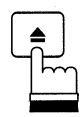
1

Lights green
↓
Flashes orange
↓
Lights orange



Press one of the buttons (1–6) to select the disc number for the CD you want to eject.

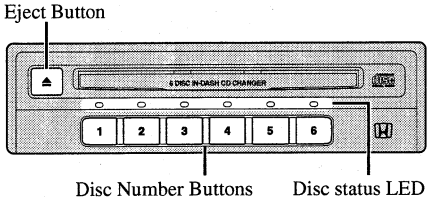
2

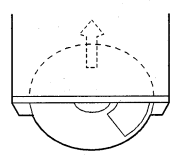


Then press eject button to eject the CD.

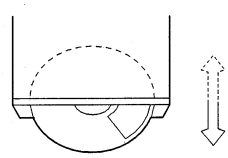
- The LED flashes green and the CD is ejected.

EJECTING THE CD (con't)





Note: If you do not remove the ejected CD from the CD loading slot within about 15 seconds, it is automatically reloaded. If you press the eject button, or press the ejected CD's disc number button (the Disc status LED that's flashing green), the CD is immediately reloaded.

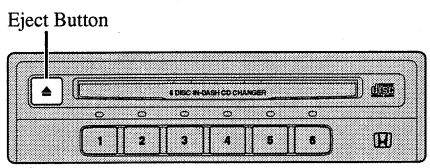


Note: If you leave the ejected CD in the CD loading slot, and press the disc number button for a CD that's loaded (the Disc status LED is lit green), the ejected CD is reloaded and the CD loaded in the disc number you selected is ejected instead. This function is convenient when the ejected CD is different from the one you want to eject.

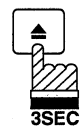
Notes:
- Pull the CD out. The LED flashes green and orange, and this product switches to the CD loading standby mode.
- You can eject CDs even if the ignition is switched OFF. In this case, you cannot perform step **1** to select a CD. When you press the eject button, the currently selected CD is ejected.
  Also, when you pull a CD out, the door immediately closes. (This unit does not switch to the CD loading standby mode.)

ILLUMINATION

This product is equipped with two illumination colors, white and orange. You can select the desired illumination color.



1



The illumination color changes each time you press and hold the eject button for 3 seconds or longer.

8.2 SPECIFICATIONS

General

Power source ..... 13.2 V DC (10.8 – 15.2 V allowable)
Grounding system ..... Negative type
Standby current ..... 2 mA or less
Rated current consumption ..... 600 mA max.
Maximum current consumption ..... 1.5 A max.
Dimensions (chassis size) .... 180 (W) x 50 (H) x 165 (D) mm
Weight ..... 1.6 kg

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format ..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16;linear
Frequency characteristics ..... 5 – 20,000 Hz
Signal-to-noise ratio ..... 93 dB (1kHz) (IHF-A network)
Dynamic range ..... 92 dB (1kHz)
Number of channels ..... 2 (stereo)